APPENDIX E

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

Pine Hills Road Pedestrian/Bicycle Safety Study

Future Travel Demand Report

Technical Memorandum No. 5

Pine Hills Road Pedestrian/Bicycle Safety Study

On behalf of Orange County Mayor Teresa Jacobs, District 2 Commissioner Bryan Nelson and District 6 Commissioner Victoria P. Siplin, Orange County is pleased to present this Future Travel Demand Report for the Pine Hills Road Pedestrian/Bicycle Safety Study. The study limits are from Colonial Drive (State Road (SR) 50) to Bonnie Brae Circle, a distance of approximately 3.6 miles.

This Pine Hills Road corridor has been identified as a high crash corridor for pedestrian and bicycle crashes. In addition, there are a variety of land uses along the corridor including multiple schools, residential, retail and office land uses, as well as heavily used transit routes, which result in a truly multi-modal corridor.

The Pine Hills Road Pedestrian/Bicycle Safety Study is a comprehensive review of the Pine Hills Road corridor which will investigate various measures to provide a safe integration of walkers and bicyclists with other modes of transportation. This study is a result of Mayor Jacobs' "Walk-Ride-Thrive!" and "INVEST in Our Home for Life" initiatives to make Orange County roads safer for all pedestrians and bicyclists.

Honorable Teresa Jacobs
Orange County Mayor

Bryan Nelson
Orange County District 2 Commissioner

Victoria P. Siplin
Orange County District 6 Commissioner

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1.0 Future Year Conditions

This report presents a description of the methodology used to determine the recommended traffic growth rates, development of future intersection AM and PM peak hour traffic volumes and evaluation of intersection multimodal traffic operations for the Pine Hills Road study corridor for the No-Build and Build conditions. The analysis for this project is based on an opening year of 2020 and design year of 2040. The No-Build condition assumes that the corridor configuration remains unchanged though year 2040. The Build condition analyzes the corridor based on a raised median and other safety related improvements along much of the length of the study corridor. A detailed explanation of each of these safety improvements is provided in the final Alternatives and Strategies Report.

1.1 Future Traffic Forecasts

This section presents the recommended growth rate used to derive future traffic volumes for the Pine Hills Road study corridor. The development of traffic projections for a study corridor requires the examination of historical growth and the proposed development levels within the corridor vicinity, as well as a basic understanding of local traffic circulation patterns and travel characteristics of the corridor.

An initial set of growth rates were derived using the following:

- Opening year 2020 and design year 2040 model volumes from the latest adopted Orlando Urban Area Transportation Study (OUATS),
- Historical traffic counts (FDOT and Orange County) from 2005 through 2015 (within the study area), and
- Population projections from the Bureau of Economic and Business Research (BEBR).

Based on the comparison of growth rates from these three sources, a recommended growth rate was determined and used to derive 2020 and 2040 turning movement volumes for the signalized study intersections. It should be noted that all growth rates referred to in this study are simple annual growth rates.

1.1.1. Model-Based Growth Rates

The year 2040 OUATS model was reviewed to verify if programmed improvements were included near the project limits, and scheduled for the next five-year period. Based on the review, it was determined that there are no funded improvements relating to road segment widening within the Pine Hills Road study area. The only programmed or planned improvements include:

- Orange County Trail System- Pine Hills Trail from Silver Star Road to Alhambra Drive: 2016-2018 (Completed),
- Orange County Trail System- Pine Hills Trail from Alhambra Drive to Clarcona-Ocoee Road: post 2018, and
- Pine Hills Road Lighting between Silver Star Road and North Lane.

Copies of the 2020 and 2040 model plots are included in Appendix A. Table 1.1 illustrates the model growth rates for Pine Hills Road. As shown in Table 1.1, the model based growth rates are less than 0.2% (0.13%). This reflects the general, built-out, land uses along the Pine Hills Road corridor. No significant redevelopment plans were identified either.

Table 1.1: Growth Rate Comparison

Source	Segment	Growth/ Year	Method	Average by Source
FDOT	Colonial Drive to Balboa Drive	0.00%	Historic Trend	0.72%
FDOT	Balboa Drive to Silver Star Road	2.16%	Historic Trend	
FDOT	Silver Star Road to Bonnie Brae Circle	0.00%	Historic Trend	
Orange County	Colonial Drive to Balboa Drive	0.88%	Historic Trend	-0.40%
Orange County	Balboa Drive to Silver Star Road	-0.61%	Historic Trend	
Orange County	North Lane to Bonnie Brae Circle	-1.47%	Historic Trend	
OUATS	Colonial Drive to Balboa Drive	-0.03%	Model Growth	0.13%
OUATS	Balboa Drive to Silver Star Road	0.14%	Model Growth	
OUATS	Silver Star Road to Indian Hill Road	0.21%	Model Growth	
OUATS	Indian Hill Road to North Lane	0.21%	Model Growth	
Average all source above:		***0.15%***		
BEBR	Medium Projection - Orange County	2.09%	Pop. Projection	2.09%

1.1.2. Historical Growth Rates

Based on the historic count information obtained from both FDOT and Orange County, a trends analysis was performed for the available count stations (2005 to 2015) on Pine Hills Road. Future growth trends were established by a least square linear regression of the historic counts. The trend analysis worksheet is provided in Appendix B. The FDOT historical trends based annual growth rate was less than 0.8% (0.72%) and the Orange County historical trends based annual growth rate was negative for two of the three stations and less than 0.9% for the remaining count station (0.40%) (Table 1.1).

1.1.3. Population Projections

Population projection data obtained from BEBR published by the University of Florida were also used for comparison purposes. The BEBR population projections are not indicative of growth in the Pine Hills Road corridor as they include regions having sufficient undeveloped tracts to grow very quickly, including Horizon West and other western beltway areas. The Pine Hills Road corridor is mature with little undeveloped land remaining. No major re-development plans were identified for areas within the study corridor. This roadway is not a prominent cut-through that will increase due to shifting of traffic. The surrounding roadways in the corridor have similar land use characteristics as Pine Hills Road. The medium population Orange County wide estimate obtained from BEBR reported an annual growth rate of 2.09% per year (Table 1.1), but are not indicative of the expected growth for the Pine Hills Road corridor. The BEBR population projection data are included in Appendix C.

1.1.4. Recommended Growth Rate

The growth rates obtained from the above three sources, combined with the existing and expected land uses along the study corridor were reviewed to derive the recommended growth rate for the study area. The model based growth rates were less than 0.2%, the growth rates from historical traffic counts were negative (-0.4%), implying an insignificant change (decrease or no change) in traffic volumes in the last 10 years. The growth rate from the population estimates (low) is 2%, but includes regions growing very quickly, such as Horizon West and other western beltway areas. As a result of the assessment of the growth rates developed from the different sources and input from Orange County staff, an annual growth rate of 1% was deemed to be reasonable and appropriate.

1.2 Intersection Design Hour Volume Development

Based on a review of the growth rate evaluation summary and concurrence from Orange County staff, a growth rate of 1.0% per year was used to derive the intersection AM and PM peak hour volumes for the No-Build Alternative for the Opening Year (2020) and Design Year (2040). The base (existing year, 2017) volumes served as the basis to apply the 1.0% per year growth to produce the future year 2020 and 2040 study intersection turning movement volumes.

Based on the proposed access management plan for the study corridor, the No-Build Alternative peak hour volumes were reassigned to derive the peak hour volumes for the Build (Raised Median) alternative. The re-assignment of the turning movement volumes for the Build Alternative reflected the restriction to turns at certain intersections (see Table 1.2 for the median treatment at the existing study intersections along the Pine Hills Road corridor) resulting from the installation of median improvements. In addition, an alternative was included in the analysis, which involved a minor variation to the Build Alternative Raised Median by providing a northbound to westbound directional median opening at the Via Maior intersection. The proposed access management plan (Raised Median) is provided in Appendix D. Projected intersection turning movement volumes for the No-Build and Build alternatives are presented in Appendix F.

Table 1.2: Build Alternative Raised Median Treatment

I#	Intersection (In order from south to north)	Control Type	Median Treatment	Prohibited Movements	Notes
1	Alhambra Drive	Stop	NB Directional	SB left, EB Left, EB Thru, WB left & WB Thru	Prohibited movements reassigned to adjacent intersections
2	Sunray Drive	Stop	Closed	NB left, SB left, EB Left, EB Thru, WB left & WB Thru	Prohibited movements reassigned to adjacent intersections
3	Deauville Drive	Stop	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
4	Sunniland Drive	Stop	Closed	NB left, SB left & EB Left	Prohibited movements reassigned to adjacent intersections
23	Balboa Drive	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
5	Delores Drive	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
6	Cortez Drive	Stop	Closed	NB left, SB left, EB Left, EB Thru, WB left & WB Thru	Prohibited movements reassigned to adjacent intersections
7	Elinore Drive	Stop	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
8	Ferdinand Drive	Stop	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
9	Golf Club Parkway	Stop	Closed	NB left, SB left, EB Left, EB Thru, WB left & WB Thru	Prohibited movements reassigned to adjacent intersections
24	Hernandes Drive	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
10	Indialantic Drive	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
11	Figwood Lane	Stop	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
25	Silver Star Road	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
26	Belco Drive	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
12	Spring Hill Drive	Stop	Closed	NB left, SB left, & EB Left	Prohibited movements reassigned to adjacent intersections
13	El Trio Way	Stop	Closed	NB left, SB left, & EB Left	Prohibited movements reassigned to adjacent intersections
14	Via Maior	Stop	Closed	NB left, SB left, & EB Left	Prohibited movements reassigned to adjacent intersections
27	Londonderry Boulevard	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
15	Pipes O the Glen Way	Stop	Closed	NB left, SB left & WB left	Prohibited movements reassigned to adjacent intersections
16	Champagne Circle	Stop	NB/SB Directional	EB Left, EB Thru, WB left & WB Thru	Prohibited movements reassigned to adjacent intersections
28	Indian Hill Road	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.
17	White Heron Drive/Doolan Court	Stop	Closed	NB left, SB left, EB Left, EB Thru, WB left & WB Thru	Prohibited movements reassigned to adjacent intersections
18	Palisades Drive	Stop	Closed	NB left, SB left, & EB Left	Prohibited movements reassigned to adjacent intersections
19	Van Aken Drive	Stop	NB/SB Directional	EB Left	Prohibited movements reassigned to adjacent intersections
20	Grandview Drive	Stop	Closed	NB left, SB left, & EB Left	Prohibited movements reassigned to adjacent intersections
21	White Heron Drive North	Stop	SB Directional	NB left & WB left	Prohibited movements reassigned to adjacent intersections
22	Fir Drive	Stop	Closed	NB left, SB left, & EB Left	Prohibited movements reassigned to adjacent intersections
29	North Lane	Signal	Full	None	Reassigned traffic from prohibited movements assigned to appropriate movements.

2.0 Operational Analysis Results

The opening year (2020) and design year (2040) operational analyses were conducted to determine the LOS for the signalized study area intersections (including intersections with proposed signal improvements), for both the No Build and Build Alternatives. Per the scope, only signalized intersections were evaluated. For the No Build analysis, the unsignalized intersections of Pine Hills Road and Delores Drive, and Pine Hills Road and Indialantic Drive) were included because both are proposed to be signalized in the near future. The LOS for the signalized study area intersections were determined using the procedures as outlined in the Highway Capacity Manual (HCM 2010) using Synchro Software (Version 9.0) for signalized intersections.

In addition to the LOS for the automobile mode, the LOS for bicycle and pedestrian modes was also evaluated at the signalized intersections. As noted in *Technical Memorandum No. 3—Existing Conditions,* six-foot wide dedicated bicycle facilities exist along Pine Hills Road between SR 50 and Figwood Lane within the project limits for the No Build and Build Alternatives.

2.1 Automobile Operational LOS

A summary of the automobile operational LOS results for the No Build and Build Alternatives AM and PM peak hours is available in **Table 2.1** of this report. The Opening Year 2020 LOS results are summarized as follows:

- With the exception of the Silver Star Road and Pine Hills Road intersection, all the other signalized intersections are projected to operate at LOS D or better under the No Build Alternative. The Silver Star Road and Pine Hills Road intersection is projected to continue to operate at LOS E under the No Build Alternative, similar to existing conditions, in Opening Year 2020.
- The Build Alternative results were similar to the No Build results. With the exception of the Silver Star Road and Pine Hills Road intersection, all the other signalized intersections are projected to operate at LOS D or better under the Build Alternative. The Silver Star Road and Pine Hills Road intersection is projected to continue to operate at LOS E under the Build Alternative, again similar to existing conditions, in Opening Year 2020.
- Under this alternative, the Build Alternative median treatment for the Pine Hills Road at Via Maior intersection will be changed from no opening to a directional opening allowing northbound to westbound traffic movements under Stop control for the minor street.

The Design Year 2040 operational analysis results are similar to the Opening Year 2020 intersection LOS results, as summarized below:

- With the exception of the Silver Star Road and Pine Hills Road intersection and the North Lane and Pine Hills Road intersection, all the other signalized intersections are projected to operate at LOS D or better under the No Build Alternative for 2040. The Silver Star Road and Pine Hills Road intersection is projected to operate at LOS F under the No Build Alternative and the North Lane and Pine Hills Road intersection is projected to operate at LOS E in Design Year 2040.
- For the Build Alternative, with the exception of the Silver Star Road and Pine Hills Road intersection and the North Lane and Pine Hills Road intersection, all the other signalized intersections are projected to operate at LOS D or better for 2040. The Silver Star Road and Pine Hills Road intersection is projected to operate at LOS F under the Build

Alternative and the North Lane and Pine Hills Road intersection is projected to operate at LOS E in Design Year 2040.

Table 2.1: Automobile No Build and Build Alternatives LOS

AM Peak Hour										
#	Intersection	Control Type	Opening Year 2020				Design Year 2040			
			No Build		Build		No Build		Build	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
5	Dolores Drive	Stop*	12.7/114.2	B/F	N/A	N/A	14.8/340.8	B/F	N/A	N/A
5	Dolores Drive	Signal	N/A	N/A	3.3	A	N/A	N/A	3.8	A
10	Indialantic Drive	Signal	12.4	B	12.4	B	14.6	B	14.7	B
23	Balboa Drive	Signal	15.2	B	15.3	B	19.2	B	19.5	B
24	Hernandes Drive	Signal	5.9	A	5.9	A	6.7	A	6.6	A
25	Silver Star Road	Signal	59.9	E	60.7	E	64.6	E	68.5	E
26	Belco Drive	Signal	19.5	B	20.1	C	27.3	B	33.4	C
27	Londonderry Boulevard	Signal	6.8	A	6.7	A	7.8	A	7.8	A
28	Indian Hill Road	Signal	15.1	B	15.1	B	18.9	B	19.2	B
PM Peak Hour										
#	Intersection	Control Type	Opening Year 2020				Design Year 2040			
			No Build		Build		No Build		Build	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
5	Dolores Drive	Stop*	14.5/173.4	B/F	N/A	N/A	17.8/646.4	C/F	N/A	N/A
5	Dolores Drive	Signal	N/A	N/A	4.7	A	N/A	N/A	7.2	A
10	Indialantic Drive	Signal	14.3	B	14.5	B	18.1	B	18.8	B
23	Balboa Drive	Signal	19.4	B	19.5	B	25.4	B	26.5	C
24	Hernandes Drive	Signal	8.3	A	8.4	A	10.0	B	10.3	B
25	Silver Star Road	Signal	71.8	E	72.1	E	97.4	F	99.3	F
26	Belco Drive	Signal	10.2	B	11.0	B	12.1	B	13.1	B
27	Londonderry Boulevard	Signal	4.9	A	4.9	A	6.1	A	6.3	A
28	Indian Hill Road	Signal	13.9	B	14.0	B	18.8	B	19.4	B
29	North Lane	Signal	41.0	D	41.0	D	55.1	E	56.0	E

(1) Automobile delay and LOS based on Synchro 9 and HCM 2010
** Unsignalized Intersection Analysis. Reported for Worst Condition Delay for the Major Street Left/Minor Street Movements.*

A summary of the automobile operational LOS results for the Build Alternative 1 AM and PM peak hours are shown in Table 5.3 for years 2020 and 2040, respectively. The operational LOS results are summarized as follows:

- For the No-Build Alternative, the Pine Hills Road and El Trio Way intersection will continue to operate at an acceptable LOS C or better for both the Opening Year 2020 and the Design Year 2040. It should be noted that this intersection is closed and the results would change if the intersection was open. However, the results include U-turns that would utilize the Build Alternative 1 directional median configuration.
- For the No-Build Alternative, the Pine Hills Road and Via Major intersection is projected to operate at LOS F for the minor street movements for both the Opening Year 2020 and the Design Year 2040.
- For the Build Alternative, the Pine Hills Road and El Trio Way intersection is projected to continue to operate at an acceptable LOS C or better for both the Opening Year 2020 and the Design Year 2040. Again, it should be noted that his intersection is closed and the

results would change if the intersection was open and the results include U-turns that would utilize the Build Alternative 1 directional median configuration.

- For the Build Alternative, the Pine Hills Road and Via Major intersection is projected to operate at an acceptable LOS E or better for both the Opening Year 2020 and the Design Year 2040.

Table 2.2: Automobile Build Alternatives

AM Peak Hour										
#	**Intersection**	**Control Type**	**Opening Year 2020**				**Design Year 2040**			
			No Build		**Build**		**No Build**		**Build**	
			Delay (s/veh)	**LOS**	**Delay (s/veh)**	**LOS**	**Delay (s/veh)**	**LOS**	**Delay (s/veh)**	**LOS**
13	El Trio Way	Stop	13.8/0.0	B/A	15.1/0.0	C/A	16.4/0.0	C/A	13.8/0.0	B/A
14	Via Maior	Stop	16.1/51.0	C/F	16.2/23.6	C/C	21.4/140.4	C/F	21.7/37.2	C/E
PM Peak Hour										
#	**Intersection**	**Control Type**	**Opening Year 2020**				**Design Year 2040**			
			No Build		**Build**		**No Build**		**Build**	
			Delay (s/veh)	**LOS**	**Delay (s/veh)**	**LOS**	**Delay (s/veh)**	**LOS**	**Delay (s/veh)**	**LOS**
13	El Trio Way	Stop	12.7/0.0	B/A	13.4/0.0	B/A	14.8/0.0	B/A	16.0/0.0	C/A
14	Via Maior	Stop	13.6/30.3	B/D	13.717.7	B/C	16.7/902.6	C/F	16.9/22.7	C/C

(1) Automobile delay and LOS based on Synchro 9 Unsignalized Intersection Analysis.
** Unsignalized Intersection Analysis. Reported for Worst Condition Delay for the Major Street Left/Minor Street Movements.*

2.2 Pedestrian/Bicycle Operational LOS

A summary of the peak hour LOS results for pedestrian and bicycle modes are shown in **Table 2.3** and **Table 2.4** for the opening year 2020 and 2040 No-Build and Build alternatives. Based on the No-Build Alternative analysis results, the pedestrian/bicycle modes at all but one (1) of the study signalized intersections are anticipated to operate at LOS D or better, for both Opening Year (2020) and Design Year (2040). Under the No-Build condition, the unsignalized intersection of Pine Hills Road and Delores will experience a LOS F condition for northbound and southbound pedestrians (no analysis procedure is provided in the HCM for bicycles under unsignalized analysis) during the AM and PM peak periods.

Based on the Build Alternative analysis results, the pedestrian/bicycle modes at all of the study signalized intersections are anticipated to operate at LOS D or better, for both opening (2020) and design year (2040). The results are summarized as follows:

- 2020 Opening Year Results
  - Based on the No Build analysis results, the pedestrian/bicycle modes at all but one (Dolores Drive) of the study signalized intersections are anticipated to operate at LOS D or better, for both Opening Year (2020) and Design Year (2040).
- 2040 Design Year Results
  - Based on the No Build analysis, the intersection of Silver Star Road will experience LOS E for southbound bicycles during the AM period and LOS E for northbound bicycles during the PM peak period.

Table 2.3: Pedestrian Intersection LOS

AM Peak Hour																		
#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Stop	B	B	F	F	N/A	N/A	N/A	N/A	B	B	F	F	A	A	C	C
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	A	A	C	C	N/A	N/A	N/A	N/A	A	A	C	C
10	Indialantic Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
23	Balboa Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
24	Hernandes Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
25	Silver Star Road	Signal	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	Belco Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
27	Londonderry Blvd	Signal	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C
28	Indian Hill Road	Signal	B	N/A	C	B	B	N/A	C	C	B	N/A	C	C	B	N/A	C	C
29	North Lane	Signal	B	B	C	B	B	B	C	B	B	B	C	C	B	B	C	C
PM Peak Hour																		
#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Stop	B	B	F	F	N/A	N/A	N/A	N/A	B	B	F	F	A	A	C	C
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	A	A	C	C	N/A	N/A	N/A	N/A	A	A	C	C
10	Indialantic Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
23	Balboa Drive	Signal	A	A	C	C	B	A	C	C	B	A	C	C	B	A	C	C
24	Hernandes Drive	Signal	A	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
25	Silver Star Road	Signal	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	Belco Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
27	Londonderry Blvd	Signal	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C
28	Indian Hill Road	Signal	B	N/A	C	C	B	N/A	C	C	B	N/A	C	C	B	N/A	C	C
29	North Lane	Signal	B	B	C	C	B	B	C	B	B	B	C	C	B	B	C	C

Table 2.4: Bicycle Intersection LOS

AM Peak Hour																		
#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	B	B	C	C	N/A	N/A	N/A	N/A	B	B	C	C
10	Indialantic Drive	Signal	B	B	B	C	B	B	C	C	B	B	C	C	B	B	C	C
23	Balboa Drive	Signal	C	B	B	C	C	B	B	C	C	B	C	C	C	B	C	C
24	Hernandes Drive	Signal	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
25	Silver Star Road	Signal	D	C	D	D	D	C	D	D	D	D	D	E	D	D	D	E
26	Belco Drive	Signal	C	B	C	C	C	B	C	C	C	B	C	C	C	B	C	C
27	Londonderry Blvd	Signal	N/A	C	C	D	N/A	C	C	D	N/A	C	C	D	N/A	C	C	D
28	Indian Hill Road	Signal	C	N/A	C	C	C	N/A	C	C	C	N/A	C	C	C	N/A	C	C
29	North Lane	Signal	C	C	B	B	C	C	C	B	C	C	C	C	C	C	C	C
PM Peak Hour																		
#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	B	B	C	C	N/A	N/A	N/A	N/A	B	B	D	C
10	Indialantic Drive	Signal	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
23	Balboa Drive	Signal	C	B	C	C	C	B	C	C	C	B	C	C	C	B	D	C
24	Hernandes Drive	Signal	B	B	C	C	B	B	C	C	B	C	D	C	B	C	D	C
25	Silver Star Road	Signal	C	D	D	D	C	D	D	D	D	D	E	D	D	E	E	D
26	Belco Drive	Signal	C	B	C	C	C	B	C	C	C	B	C	C	C	B	C	C
27	Londonderry Blvd	Signal	N/A	B	C	D	N/A	B	D	C	N/A	C	D	D	N/A	C	C	D
28	Indian Hill Road	Signal	C	N/A	D	C	C	N/A	D	C	C	N/A	D	C	C	N/A	D	C
29	North Lane	Signal	C	C	C	B	C	C	C	B	C	D	C	C	C	D	C	C

3.0 Future LOS Conclusions

Based on the multimodal operational analysis of the study intersections, it is anticipated that under the proposed Build Alternative access modifications, all the study signalized intersections except Silver Star Road and North Lane will operate at LOS D or better by 2040. This outcome is similar to the results for the No Build Alternative. The proposed Build Alternative access modifications will not adversely impact the traffic operations of any mode (auto, pedestrian or bicycle modes) under future conditions (2020 and 2040). For the non-motorized modes, the No Build Alternative indicates that Delores Drive will operate at LOS F for bicycles during the AM and PM peak hours.

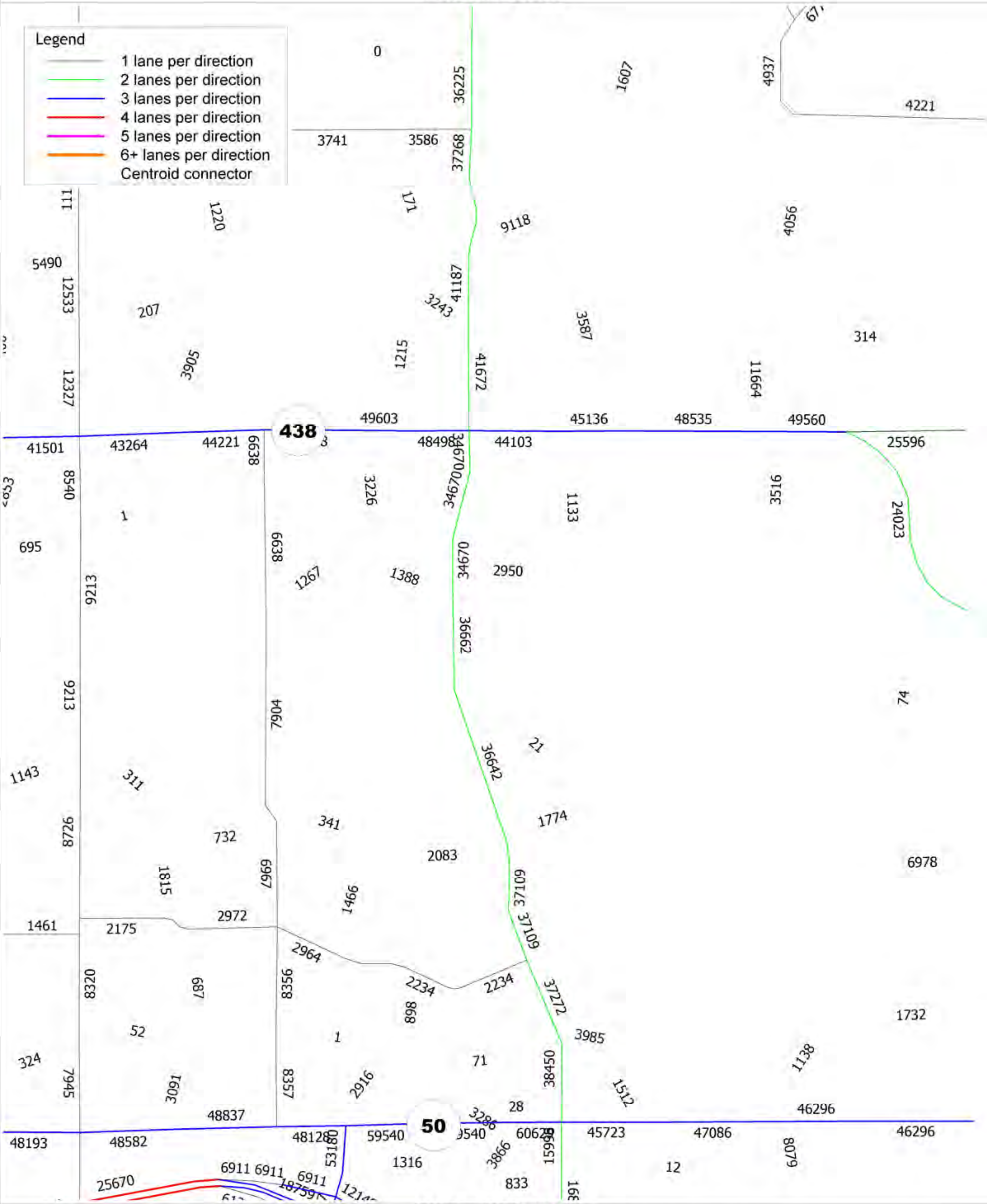
The signalized intersection delays would be slightly higher under the Build Alternative compared to the No Build Alternative, but would not result in a change in the LOS conditions. Moreover, LOS conditions at the unsignalized intersection would generally remain the same or were improved under the Build Alternative (compared to the No Build Alternative) because of the left turn movements restricted at many of the side streets/driveways along the corridor. For the non-motorized modes, the No Build and Build Alternatives would have similar results under the future conditions.

APPENDIX E-1

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

2020 & 2040 Model Plots

Pine Hills Road



OUATS YEAR 2020 LRTP

S:\FSUTMS\d5\OUATS.40\Base\CF2020\LT\PineHills\Output\HRLDXY_C20.NET 5/26/2017

Pine Hills Road

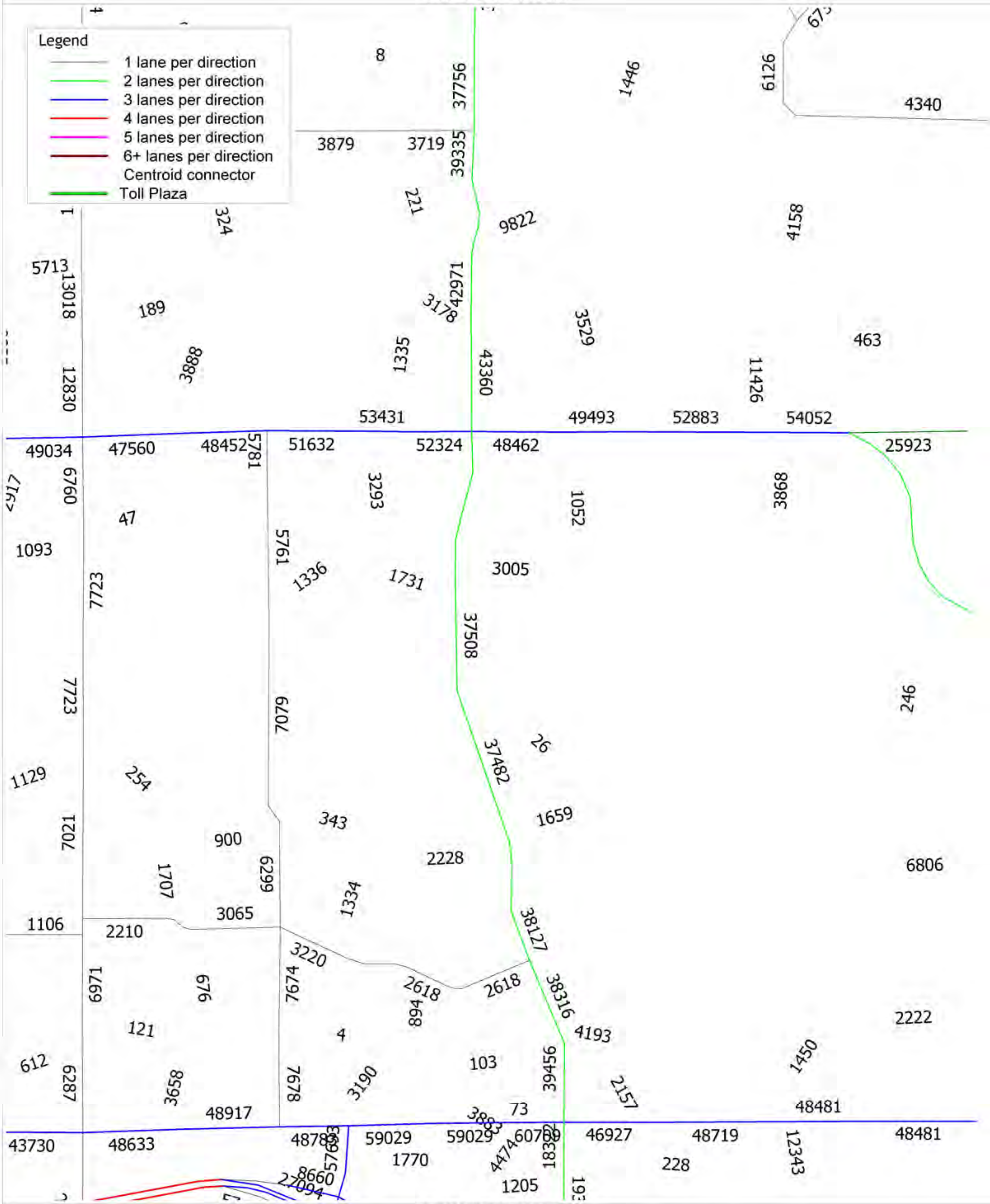


TABLE ___-___

Pine Hills Road Pedestrian / Bicycle Safety Study

Orange County, Florida

Projected Roadway Segment Volumes - Opening Year 2020

Roadway Segment	2020 Model[1] Daily Volume	2020 AADT[2] Daily Volume	FDOT Daily Capacity[3]	Volume Capacity Ratio
Pine Hills Road				
SR 50 / Colonial Dr to Balboa Dr	38,450	37,700	39,800	0.95
Balboa Dr to SR 438 / Silver Star Rd	37,109	36,400	39,800	0.91
SR 438 / Silver Star Rd to Indian Hills Rd	41,672	40,800	39,800	1.03
Indian Hills Rd to North Ln	36,225	35,500	39,800	0.89

[1] - OUATS LRTP 2020 Total Two-way Daily Volume

[2] - FDOT FTI 2015 Peak Season Factor - Orange County MOCF = 0.98

[3] - Generalized Annual Average Daily Volume for Urbanized Areas, 2012 FDOT Q/LOS Handbook Table 1

TABLE __-__

Pine Hills Road Pedestrian / Bicycle Safety Study

Orange County, Florida

Projected Roadway Segment Volumes - Design Year 2040

Roadway Segment	2040 Model[1] Daily Volume	2040 AADT[2] Daily Volume	FDOT Daily Capacity[3]	Volume Capacity Ratio
Pine Hills Road				
SR 50 / Colonial Dr to Balboa Dr	38,316	37,500	39,800	0.94
Balboa Dr to SR 438 / Silver Star Rd	38,127	37,400	39,800	0.94
SR 438 / Silver Star Rd to Indian Hills Rd	43,360	42,500	39,800	1.07
Indian Hills Rd to North Ln	37,756	37,000	39,800	0.93

[1] - OUATS LRTP 2040 Total Two-way Daily Volume

[2] - FDOT FTI 2015 Peak Season Factor - Orange County MOCF = 0.98

[3] - Generalized Annual Average Daily Volume for Urbanized Areas, 2012 FDOT Q/LOS Handbook Table 1

APPENDIX E-2

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

FDOT & Orange County Historical Counts

Source	FDOT	FDOT	FDOT	Orange	Orange	Orange
Station	75-8308	75-7047	75-8309	407.0	406.0	82.0
Location	N. of SR 50	Balboa to SR438	N. of Silver Star Rd	Balboa Dr to SR 50	Balboa Dr to SR 438	N. of North Ln
2016				35,341	*34,950*	38,105
2015	31,000	33,500	39,000	32,577	32,254	38,977
2014	30,000	32,500	38,000	32,826	30,152	32,969
2013	30,000	32,500	38,000	30,662	30,471	32,287
2012	30,000	29,000	38,000	29,489	30,171	30,141
2011	30,000	29,000	38,000	29,929	30,358	30,416
2010		28,000		32,422	29,808	28,956
2009		29,500		31,206	29,874	35,739
2017	31,000	34,946	39,000	35,653	33,546	37,545
Base	2015	2015	2015	2016	2016	2016
	0.00%	2.16%	0.00%	0.88%	-4.02%	-1.47%

FDOT Average	0.72%				31,859
Orange Average	-1.53%				2015
Orange Average *	-0.40%			*	-0.61%
FDOT and Orange* Average	0.16%				

* without 2016 traffic count

APPENDIX E-3

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

BEBR Population Projections

Projections of Florida Population by County, 2020–2045, with Estimates for 2015 (continued)

County and State	Estimates April 1, 2015	Projections, April 1 2020	2025	2030	2035	2040	2045
MIAMI-DADE	2,653,934						
Low		2,687,900	2,738,100	2,797,100	2,838,100	2,865,100	2,884,700
Medium		2,832,000	2,996,000	3,155,300	3,294,700	3,423,600	3,550,000
High		2,955,300	3,202,800	3,463,600	3,721,300	3,979,700	4,246,900
MONROE	74,206						
Low		71,000	68,900	67,000	65,000	63,000	61,000
Medium		74,400	74,500	74,600	74,600	74,500	74,400
High		78,100	80,500	82,800	85,000	87,200	89,300
NASSAU	76,536						
Low		78,300	80,900	83,300	85,000	86,000	86,000
Medium		84,500	92,000	98,900	105,300	111,300	116,500
High		89,600	100,500	111,800	123,400	135,300	146,800
OKALOOSA	191,898						
Low		191,300	191,700	191,600	190,600	188,900	187,100
Medium		201,200	208,700	214,300	219,200	223,500	227,800
High		210,300	224,100	236,800	249,200	261,300	273,800
OKEECHOBEE	40,052						
Low		39,500	39,100	38,600	38,000	37,300	36,500
Medium		41,500	42,500	43,000	43,600	44,100	44,500
High		43,500	45,700	47,700	49,700	51,600	53,400
ORANGE	1,252,396						
Low		1,315,800	1,384,700	1,446,100	1,495,100	1,530,900	1,549,700
Medium		1,407,600	1,551,400	1,679,700	1,799,100	1,908,000	2,004,000
High		1,475,900	1,669,000	1,864,000	2,062,500	2,262,100	2,455,400
OSCEOLA	308,327						
Low		338,800	372,300	401,800	421,400	434,900	444,800
Medium		368,200	427,900	481,600	525,700	566,300	605,800
High		387,700	461,900	537,900	609,700	681,200	755,600
PALM BEACH	1,378,417						
Low		1,397,500	1,421,500	1,441,500	1,452,100	1,454,900	1,452,800
Medium		1,472,600	1,554,900	1,624,000	1,684,400	1,738,100	1,789,000
High		1,536,500	1,662,700	1,785,000	1,904,100	2,020,900	2,138,900
PASCO	487,588						
Low		505,700	527,300	547,400	563,700	576,800	585,600
Medium		540,400	590,000	635,300	678,100	718,900	757,100
High		567,300	635,600	705,600	777,700	852,300	927,800
PINELLAS	944,971						
Low		921,900	906,500	891,900	874,800	860,200	845,100
Medium		956,500	967,100	972,500	975,700	982,200	987,900
High		993,600	1,028,200	1,059,100	1,087,400	1,119,400	1,151,500
POLK	633,052						
Low		649,700	671,700	691,900	707,800	718,000	720,800
Medium		693,400	750,500	802,100	850,700	894,600	932,600
High		728,700	809,600	891,900	976,400	1,060,900	1,142,000
PUTNAM	72,756						
Low		69,900	68,000	66,500	65,000	63,500	62,000
Medium		73,200	73,700	74,200	74,600	75,100	75,500
High		76,900	79,500	82,300	85,000	87,800	90,700
ST. JOHNS	213,566						
Low		233,500	254,600	273,000	285,300	293,900	300,600
Medium		253,600	292,200	326,900	355,800	382,700	409,300
High		267,200	315,800	365,500	412,800	460,400	510,600
ST. LUCIE	287,749						
Low		302,400	320,100	336,700	350,700	360,400	366,700
Medium		323,500	359,000	391,500	422,400	449,300	474,000
High		339,200	385,900	434,000	483,800	532,600	580,900

APPENDIX E-4

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

Proposed Build Raised Median Plan

Build Alternative – Raised Median Concept

Existing LYNX Bus Stop
Remove LYNX Bus Stop
New LYNX Bus Stop
Existing Crosswalk
Proposed Crosswalk
Existing Crosswalk to be Removed
Raised Median
Traffic Separator
Existing Signalized Intersection
Proposed Signalized Intersection


N
Lion of Judah Academy
New Covenant Church
Elinore Dr.
Ruby's Little Creations
Dolores Dr.
N. Pine Hills Road
Future Stars Academy
Cortez Dr.
Ferdinand Dr.
Children's Palace
N. Pine Hills Road
Golf Club Parkway
Granny Annie's Youth Center
Pine Hills Community Church
Existing LYNX Bus Stop
Remove LYNX Bus Stop
New LYNX Bus Stop
Existing Crosswalk
Proposed Crosswalk
Existing Crosswalk to be Removed
Raised Median
Traffic Separator
Existing Signalized Intersection
Proposed Signalized Intersection

Existing LYNX Bus Stop
Remove LYNX Bus Stop
New LYNX Bus Stop
Existing Crosswalk
Proposed Crosswalk
Existing Crosswalk to be Removed
Raised Median
Traffic Separator
Existing Signalized Intersection
Proposed Signalized Intersection

Existing LYNX Bus Stop
Remove LYNX Bus Stop
New LYNX Bus Stop
Existing Crosswalk
Proposed Crosswalk
Existing Crosswalk to be Removed
Raised Median
Traffic Separator
Existing Signalized Intersection
Proposed Signalized Intersection

Existing LYNX Bus Stop
Remove LYNX Bus Stop
New LYNX Bus Stop
Existing Crosswalk
Proposed Crosswalk
Existing Crosswalk to be Removed
Raised Median
Traffic Separator
Existing Signalized Intersection
Proposed Signalized Intersection

APPENDIX E-5

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

No-Build and Build Synchro Worksheets

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	2	2	1	6	4	1026	1	9	1336	5
Future Vol, veh/h	5	1	2	2	1	6	4	1026	1	9	1336	5
Conflicting Peds, #/hr	0	0	1	1	0	0	14	0	4	4	0	14
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	25	25	25	2	2	2	2	2	2
Mvmt Flow	5	1	2	2	1	6	4	1080	1	9	1406	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1991	2535	721	1817	2538	545	1426	0	0	1085	0	0
Stage 1	1442	1442	-	1093	1093	-	-	-	-	-	-	
Stage 2	549	1093	-	724	1445	-	-	-	-	-	-	
Critical Hdwy	7.54	6.54	6.94	8	7	7.4	4.14	-	-	4.14	-	
Critical Hdwy Stg 1	6.54	5.54	-	7	6	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.54	5.54	-	7	6	-	-	-	-	-	-	
Follow-up Hdwy	3.52	4.02	3.32	3.75	4.25	3.55	2.22	-	-	2.22	-	
Pot Cap-1 Maneuver	36	27	370	38	19	428	473	-	-	639	-	
Stage 1	139	196	-	192	244	-	-	-	-	-	-	
Stage 2	488	288	-	335	159	-	-	-	-	-	-	
Platoon blocked, %								-	-			-
Mov Cap-1 Maneuver	33	26	365	36	18	426	473	-	-	639	-	
Mov Cap-2 Maneuver	33	26	-	36	18	-	-	-	-	-	-	
Stage 1	136	191	-	190	241	-	-	-	-	-	-	
Stage 2	475	284	-	326	155	-	-	-	-	-	-	

Approach	EB	WB	NB	SB
HCM Control Delay, s	114.2	62.4	0	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	473	-	-	41	72	639	-	-
HCM Lane V/C Ratio	0.009	-	-	0.205	0.132	0.015	-	-
HCM Control Delay (s)	12.7	-	-	114.2	62.4	10.7	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.4	0	-	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	3749270
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	2362
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.97
Delay for adq Gap	3749270.00
Avg Ped Delay (s)	3749270.00

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	3749270
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	2362
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.97
Delay for adq Gap	3749270.00
Avg Ped Delay (s)	3749270.00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1	63	66	4	27	24	930	34	13	1158	27
Future Volume (veh/h)	35	1	63	66	4	27	24	930	34	13	1158	27
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	1	64	67	4	27	24	939	34	13	1170	27
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	21	129	172	18	51	353	2378	86	422	2375	55
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.68	0.68	0.02	0.67	0.67
Sat Flow, veh/h	412	164	1024	927	141	406	1774	3482	126	1774	3533	82
Grp Volume(v), veh/h	100	0	0	98	0	0	24	477	496	13	586	611
Grp Sat Flow(s),veh/h/ln	1600	0	0	1474	0	0	1774	1770	1839	1774	1770	1845
Q Serve(g_s), s	0.0	0.0	0.0	0.5	0.0	0.0	0.5	12.9	12.9	0.3	17.8	17.9
Cycle Q Clear(g_c), s	5.9	0.0	0.0	6.4	0.0	0.0	0.5	12.9	12.9	0.3	17.8	17.9
Prop In Lane	0.35		0.64	0.68		0.28	1.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	245	0	0	240	0	0	353	1208	1255	422	1190	1240
V/C Ratio(X)	0.41	0.00	0.00	0.41	0.00	0.00	0.07	0.39	0.39	0.03	0.49	0.49
Avail Cap(c_a), veh/h	569	0	0	544	0	0	441	1208	1255	513	1190	1240
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	0.0	0.0	44.8	0.0	0.0	6.5	7.6	7.6	6.0	8.8	8.8
Incr Delay (d2), s/veh	1.1	0.0	0.0	1.1	0.0	0.0	0.1	0.9	0.9	0.0	1.5	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 BackOfQ(50%),veh/ln	2.9	0.0	0.0	2.9	0.0	0.0	0.2	6.5	6.8	0.1	9.1	9.5
LnGrp Delay(d),s/veh	45.8	0.0	0.0	45.9	0.0	0.0	6.6	8.5	8.5	6.0	10.3	10.2
LnGrp LOS	D			D			A	A	A	A	B	B
Approach Vol, veh/h		100			98			997			1210	
Approach Delay, s/veh		45.8			45.9			8.4			10.2	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	80.4		20.0	8.4	81.6		20.0
Change Period (Y+Rc), s	6.4	6.5		* 6.2	6.4	6.5		* 6.2
Max Green Setting (Gmax), s	8.6	44.5		* 38	7.6	45.5		* 38
Max Q Clear Time (g_c+I1), s	2.5	19.9		7.9	2.3	14.9		8.4
Green Ext Time (p_c), s	0.0	15.6		1.3	0.0	17.8		1.3

Intersection Summary		
HCM 2010 Ctrl Delay		12.4
HCM 2010 LOS		B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	55.0	55.0	55.0	55.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.80	1.79	2.92	2.89
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	100	98	997	1210
Effct. Green for Bike (s)	11.9	11.9	80.4	77.8
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	216	216	1462	1415
Bicycle Delay (s/bike)	43.7	43.7	4.0	4.7
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.64	2.64	2.75	2.93
Bicycle LOS	B	B	B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	7	63	35	8	1	47	874	11	2	1249	128
Future Volume (veh/h)	115	7	63	35	8	1	47	874	11	2	1249	128
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	119	7	65	36	8	1	48	901	11	2	1288	128
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	8	74	186	38	4	293	2766	34	472	2264	224
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.77	0.77	0.70	0.70	0.70
Sat Flow, veh/h	951	58	521	1004	265	29	1774	3580	44	609	3244	321
Grp Volume(v), veh/h	191	0	0	45	0	0	48	445	467	2	700	716
Grp Sat Flow(s),veh/h/ln	1530	0	0	1298	0	0	1774	1770	1854	609	1770	1796
Q Serve(g_s), s	13.7	0.0	0.0	0.0	0.0	0.0	1.1	11.5	11.5	0.2	29.7	30.0
Cycle Q Clear(g_c), s	18.2	0.0	0.0	4.5	0.0	0.0	1.1	11.5	11.5	0.4	29.7	30.0
Prop In Lane	0.62		0.34	0.80		0.02	1.00		0.02	1.00		0.18
Lane Grp Cap(c), veh/h	257	0	0	228	0	0	293	1368	1433	472	1235	1253
V/C Ratio(X)	0.74	0.00	0.00	0.20	0.00	0.00	0.16	0.33	0.33	0.00	0.57	0.57
Avail Cap(c_a), veh/h	398	0	0	366	0	0	373	1368	1433	472	1235	1253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	0.0	0.0	57.0	0.0	0.0	9.0	5.2	5.2	6.9	11.3	11.4
Incr Delay (d2), s/veh	4.2	0.0	0.0	0.4	0.0	0.0	0.3	0.6	0.6	0.0	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	0.0	1.7	0.0	0.0	0.5	5.8	6.1	0.0	15.0	15.4
LnGrp Delay(d),s/veh	66.9	0.0	0.0	57.4	0.0	0.0	9.2	5.8	5.8	7.0	13.2	13.3
LnGrp LOS	E			E			A	A	A	A	B	B
Approach Vol, veh/h		191			45			960			1418	
Approach Delay, s/veh		66.9			57.4			6.0			13.2	
Approach LOS		E			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.2	111.2		27.6		122.4		27.6
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	11.6	83.5		* 36		* 1E2		* 36
Max Q Clear Time (g_c+I1), s	3.1	32.0		20.2		13.5		6.5
Green Ext Time (p_c), s	0.0	26.5		1.2		32.1		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.93	1.77	2.94	2.96
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	191	45	960	1418
Effct. Green for Bike (s)	24.4	24.7	113.0	102.3
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	325	329	1507	1364
Bicycle Delay (s/bike)	52.6	52.3	4.6	7.6
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.79	2.55	2.72	3.10
Bicycle LOS	C	B	B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1	8	56	6	30	6	987	23	29	1201	28
Future Volume (veh/h)	30	1	8	56	6	30	6	987	23	29	1201	28
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)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
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	1759	1759	1900	1863	1863	1900	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	31	1	8	58	6	31	6	1018	24	30	1238	29
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	8	8	8	2	2	2	3	3	3	2	2	2
Cap, veh/h	148	13	101	176	20	101	371	2757	65	458	2785	65
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	1281	168	1342	1390	261	1350	431	3497	82	539	3532	83
Grp Volume(v), veh/h	31	0	9	58	0	37	6	510	532	30	620	647
Grp Sat Flow(s),veh/h/ln	1281	0	1510	1390	0	1612	431	1752	1827	539	1770	1845
Q Serve(g_s), s	2.1	0.0	0.5	3.6	0.0	2.0	0.4	7.8	7.8	1.6	10.3	10.3
Cycle Q Clear(g_c), s	4.1	0.0	0.5	4.1	0.0	2.0	10.7	7.8	7.8	9.4	10.3	10.3
Prop In Lane	1.00		0.89	1.00		0.84	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	148	0	113	176	0	121	371	1382	1441	458	1395	1455
V/C Ratio(X)	0.21	0.00	0.08	0.33	0.00	0.31	0.02	0.37	0.37	0.07	0.44	0.44
Avail Cap(c_a), veh/h	538	0	572	599	0	611	371	1382	1441	458	1395	1455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	41.3	0.0	38.7	40.7	0.0	39.4	4.8	2.8	2.8	4.2	3.1	3.1
Incr Delay (d2), s/veh	0.7	0.0	0.3	1.1	0.0	1.4	0.1	0.8	0.7	0.2	0.9	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 BackOfQ(50%),veh/ln	0.8	0.0	0.2	1.5	0.0	0.9	0.1	4.0	4.1	0.3	5.2	5.4
LnGrp Delay(d),s/veh	42.0	0.0	39.0	41.7	0.0	40.8	4.9	3.6	3.6	4.5	4.0	4.0
LnGrp LOS	D		D	D		D	A	A	A	A	A	A
Approach Vol, veh/h		40			95			1048			1297	
Approach Delay, s/veh		41.4			41.4			3.6			4.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		77.4		12.6		77.4		12.6
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		43.6		34.1		43.6		34.1
Max Q Clear Time (g_c+I1), s		12.7		6.1		12.3		6.1
Green Ext Time (p_c), s		19.9		0.5		20.1		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.97	1.99	2.92	2.93
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	40	95	1048	1297
Effct. Green for Bike (s)	9.0	9.3	72.1	72.1
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	200	207	1602	1602
Bicycle Delay (s/bike)	36.5	36.2	1.8	1.8
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.55	2.63	2.98	3.18
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	1188	195	190	626	232	191	482	233	335	726	186
Future Volume (veh/h)	176	1188	195	190	626	232	191	482	233	335	726	186
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	185	1251	205	200	659	244	201	507	245	353	764	196
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	1991	326	236	1660	602	239	780	340	399	945	407
Arrive On Green	0.07	0.45	0.45	0.07	0.46	0.46	0.07	0.22	0.22	0.12	0.27	0.27
Sat Flow, veh/h	3442	4385	719	3408	3617	1312	3408	3505	1528	3408	3505	1510
Grp Volume(v), veh/h	185	967	489	200	611	292	201	507	245	353	764	196
Grp Sat Flow(s),veh/h/ln	1721	1695	1713	1704	1679	1572	1704	1752	1528	1704	1752	1510
Q Serve(g_s), s	10.1	41.4	41.4	11.0	22.9	23.5	11.1	25.0	28.2	19.4	38.7	20.7
Cycle Q Clear(g_c), s	10.1	41.4	41.4	11.0	22.9	23.5	11.1	25.0	28.2	19.4	38.7	20.7
Prop In Lane	1.00		0.42	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	1539	778	236	1541	721	239	780	340	399	945	407
V/C Ratio(X)	0.82	0.63	0.63	0.85	0.40	0.41	0.84	0.65	0.72	0.88	0.81	0.48
Avail Cap(c_a), veh/h	355	1539	778	276	1541	721	316	897	391	567	1155	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	87.7	39.6	39.6	87.4	34.0	34.1	87.3	67.1	68.4	82.6	64.8	58.2
Incr Delay (d2), s/veh	8.4	2.0	3.8	18.8	0.8	1.7	14.3	1.4	5.4	8.1	2.4	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 BackOfQ(50%),veh/ln	5.1	19.8	20.4	5.8	10.8	10.6	5.7	12.3	12.5	9.6	19.1	8.7
LnGrp Delay(d),s/veh	96.1	41.6	43.5	106.2	34.7	35.8	101.6	68.5	73.8	90.7	67.2	58.8
LnGrp LOS	F	D	D	F	C	D	F	E	E	F	E	E
Approach Vol, veh/h		1641			1103			953			1313	
Approach Delay, s/veh		48.3			48.0			76.8			72.3	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	93.8	28.7	48.7	19.8	92.9	19.7	57.7
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	19.6	64.4	31.6	48.6	15.4	* 69	17.6	62.6
Max Q Clear Time (g_c+I1), s	12.1	25.5	21.4	30.2	13.0	43.4	13.1	40.7
Green Ext Time (p_c), s	0.3	23.6	0.9	9.6	0.1	17.7	0.2	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	59.9
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.20	3.25	3.03	3.05
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1641	1103	953	1313
Effct. Green for Bike (s)	82.6	83.3	40.4	49.6
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	869	877	425	522
Bicycle Delay (s/bike)	30.4	30.0	58.9	51.9
Bicycle Compliance	Poor	Fair	Poor	Poor
Bicycle LOS Score	3.75	3.45	3.84	4.13
Bicycle LOS	D	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	1	8	1	1	1	11	801	1	3	1236	201
Future Volume (veh/h)	149	1	8	1	1	1	11	801	1	3	1236	201
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.95	0.99		0.95
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	1900	1863	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	160	1	9	1	1	1	12	861	1	3	1329	216
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	275	1	11	171	152	235	193	2277	3	417	1878	301
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.02	0.63	0.63	0.00	0.42	0.42
Sat Flow, veh/h	1325	8	75	747	1022	1580	1757	3592	4	1774	3028	486
Grp Volume(v), veh/h	170	0	0	2	0	1	12	420	442	3	770	775
Grp Sat Flow(s),veh/h/ln	1408	0	0	1770	0	1580	1757	1752	1844	1774	1770	1744
Q Serve(g_s), s	10.5	0.0	0.0	0.0	0.0	0.0	0.2	10.4	10.4	0.1	32.3	33.3
Cycle Q Clear(g_c), s	10.5	0.0	0.0	0.1	0.0	0.0	0.2	10.4	10.4	0.1	32.3	33.3
Prop In Lane	0.94		0.05	0.50		1.00	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	287	0	0	324	0	235	193	1111	1169	417	1098	1082
V/C Ratio(X)	0.59	0.00	0.00	0.01	0.00	0.00	0.06	0.38	0.38	0.01	0.70	0.72
Avail Cap(c_a), veh/h	490	0	0	556	0	465	299	1111	1169	549	1098	1082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.68	0.68	0.68	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	0.0	32.6	0.0	32.6	12.3	7.9	7.9	6.8	19.4	19.7
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.6	0.0	3.7	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	0.0	0.0	0.0	0.1	5.2	5.5	0.0	16.9	17.3
LnGrp Delay(d),s/veh	39.0	0.0	0.0	32.6	0.0	32.6	12.4	8.6	8.6	6.8	23.2	23.8
LnGrp LOS	D			C		C	B	A	A	A	C	C
Approach Vol, veh/h		170			3			874			1548	
Approach Delay, s/veh		39.0			32.6			8.6			23.4	
Approach LOS		D			C			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.6	62.3		19.1	7.3	63.6		19.1
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	7.0	* 38		* 27	7.1	37.5		* 26
Max Q Clear Time (g_c+I1), s	2.2	35.3		2.1	2.1	12.4		12.5
Green Ext Time (p_c), s	0.0	2.1		1.0	0.0	18.1		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.89	1.95	2.89	2.98
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	170	3	874	1548
Effct. Green for Bike (s)	16.3	16.5	58.9	59.0
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	362	367	1309	1311
Bicycle Delay (s/bike)	30.2	30.0	5.4	5.3
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.94	2.67	2.83	3.20
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	175	14	818	125	6	1201
Future Volume (veh/h)	175	14	818	125	6	1201
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1900	1845	1845
Adj Flow Rate, veh/h	184	15	861	132	6	1264
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	3	3
Cap, veh/h	227	203	2237	343	492	2585
Arrive On Green	0.13	0.13	1.00	1.00	0.74	0.74
Sat Flow, veh/h	1774	1583	3126	465	558	3597
Grp Volume(v), veh/h	184	15	497	496	6	1264
Grp Sat Flow(s),veh/h/ln	1774	1583	1752	1746	558	1752
Q Serve(g_s), s	9.1	0.8	0.0	0.0	0.3	13.3
Cycle Q Clear(g_c), s	9.1	0.8	0.0	0.0	0.3	13.3
Prop In Lane	1.00	1.00		0.27	1.00	
Lane Grp Cap(c), veh/h	227	203	1292	1288	492	2585
V/C Ratio(X)	0.81	0.07	0.38	0.38	0.01	0.49
Avail Cap(c_a), veh/h	597	533	1292	1288	492	2585
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	34.5	0.0	0.0	3.1	4.9
Incr Delay (d2), s/veh	6.8	0.2	0.9	0.9	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.3	0.3	0.3	0.0	6.6
LnGrp Delay(d),s/veh	44.9	34.7	0.9	0.9	3.2	5.5
LnGrp LOS	D	C	A	A	A	A
Approach Vol, veh/h	199		993			1270
Approach Delay, s/veh	44.2		0.9			5.5
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		72.8				72.8		17.2
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		47.6				47.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				15.3		11.1
Green Ext Time (p_c), s		25.0				20.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.04	2.93	2.87
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	199	993	1270
Effct. Green for Bike (s)	14.7	63.2	63.2
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	327	1404	1404
Bicycle Delay (s/bike)	31.5	4.0	4.0
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.81	2.95	3.53
Bicycle LOS	C	C	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	225	171	689	963	56
Future Volume (veh/h)	65	225	171	689	963	56
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1845	1900
Adj Flow Rate, veh/h	67	232	176	710	993	58
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	3	3	3
Cap, veh/h	307	274	388	2420	1855	108
Arrive On Green	0.17	0.17	0.07	0.69	0.55	0.55
Sat Flow, veh/h	1774	1583	1757	3597	3451	196
Grp Volume(v), veh/h	67	232	176	710	518	533
Grp Sat Flow(s),veh/h/ln	1774	1583	1757	1752	1752	1803
Q Serve(g_s), s	2.9	12.8	3.6	7.1	16.9	16.9
Cycle Q Clear(g_c), s	2.9	12.8	3.6	7.1	16.9	16.9
Prop In Lane	1.00	1.00	1.00			0.11
Lane Grp Cap(c), veh/h	307	274	388	2420	968	996
V/C Ratio(X)	0.22	0.85	0.45	0.29	0.54	0.54
Avail Cap(c_a), veh/h	556	496	419	2420	968	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	36.1	9.4	5.4	12.8	12.8
Incr Delay (d2), s/veh	0.4	7.1	0.8	0.3	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.1	1.8	3.5	8.6	8.9
LnGrp Delay(d),s/veh	32.3	43.2	10.3	5.7	14.9	14.9
LnGrp LOS	C	D	B	A	B	B
Approach Vol, veh/h	299			886	1051	
Approach Delay, s/veh	40.8			6.6	14.9	
Approach LOS	D			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.4	56.2		21.4		68.6		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	7.5	35.5		* 28		49.5		
Max Q Clear Time (g_c+I1), s	5.6	18.9		14.8		9.1		
Green Ext Time (p_c), s	0.1	10.1		0.8		15.9		

Intersection Summary			
HCM 2010 Ctrl Delay			15.1
HCM 2010 LOS			B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.12	2.86	2.74
Pedestrian Crosswalk LOS	B	C	B

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	299	886	1051
Effct. Green for Bike (s)	9.3	68.4	52.4
Cross Street Width (ft)	60.0	60.0	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	207	1520	1164
Bicycle Delay (s/bike)	36.2	2.6	7.9
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.97	3.21	2.98
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	107	129	262	121	58	78	516	144	16	604	57
Future Volume (veh/h)	95	107	129	262	121	58	78	516	144	16	604	57
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)	0.95		0.93	0.99		0.97	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1845	1845	1900	1827	1827	1900
Adj Flow Rate, veh/h	99	111	134	273	126	60	81	538	150	17	629	59
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	251	131	158	328	421	200	373	1320	366	350	1522	143
Arrive On Green	0.18	0.18	0.18	0.14	0.36	0.36	0.04	0.49	0.49	0.02	0.47	0.47
Sat Flow, veh/h	1139	735	887	1774	1181	562	1757	2690	746	1740	3205	300
Grp Volume(v), veh/h	99	0	245	273	0	186	81	350	338	17	340	348
Grp Sat Flow(s),veh/h/ln	1139	0	1623	1774	0	1743	1757	1752	1683	1740	1736	1770
Q Serve(g_s), s	11.7	0.0	21.9	18.3	0.0	11.5	3.5	19.0	19.2	0.7	19.2	19.3
Cycle Q Clear(g_c), s	11.7	0.0	21.9	18.3	0.0	11.5	3.5	19.0	19.2	0.7	19.2	19.3
Prop In Lane	1.00		0.55	1.00		0.32	1.00		0.44	1.00		0.17
Lane Grp Cap(c), veh/h	251	0	290	328	0	621	373	860	826	350	824	841
V/C Ratio(X)	0.39	0.00	0.85	0.83	0.00	0.30	0.22	0.41	0.41	0.05	0.41	0.41
Avail Cap(c_a), veh/h	304	0	365	367	0	743	440	860	826	443	824	841
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	0.0	59.6	42.3	0.0	34.8	20.0	24.3	24.4	20.3	25.7	25.7
Incr Delay (d2), s/veh	1.0	0.0	13.8	13.9	0.0	0.3	0.3	1.4	1.5	0.1	1.5	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 BackOfQ(50%),veh/ln	3.8	0.0	11.0	10.2	0.0	5.6	1.7	9.6	9.3	0.4	9.5	9.7
LnGrp Delay(d),s/veh	56.4	0.0	73.4	56.2	0.0	35.0	20.3	25.7	25.9	20.3	27.2	27.2
LnGrp LOS	E		E	E		D	C	C	C	C	C	C
Approach Vol, veh/h		344			459			769			705	
Approach Delay, s/veh		68.5			47.6			25.2			27.1	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	80.3	26.7	33.1	12.3	77.9		59.8
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64
Max Q Clear Time (g_c+I1), s	2.7	21.2	20.3	23.9	5.5	21.3		13.5
Green Ext Time (p_c), s	0.0	10.0	0.3	2.1	0.1	10.0		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.20	2.25	2.80	2.69
Pedestrian Crosswalk LOS	B	B	C	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	344	459	769	705
Effct. Green for Bike (s)	24.6	53.0	78.8	68.9
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	328	707	1051	919
Bicycle Delay (s/bike)	52.4	31.4	16.9	21.9
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.05	3.23	2.74	2.69
Bicycle LOS	C	C	B	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9				
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5				
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5				
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9				
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6				
Intersection Summary												
HCM 2010 Ctrl Delay			59.2									
HCM 2010 LOS			E									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	4	6	1	9	2	1538	7	9	1250	3
Future Vol, veh/h	3	1	4	6	1	9	2	1538	7	9	1250	3
Conflicting Peds, #/hr	4	0	0	0	0	4	4	0	14	14	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	4	6	1	9	2	1619	7	9	1316	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2158	2985	663	2318	2983	831	1323	0	0	1640	0	0
Stage 1	1340	1340	-	1641	1641	-	-	-	-	-	-	-
Stage 2	818	1645	-	677	1342	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	27	14	404	20	14	313	518	-	-	391	-	-
Stage 1	161	220	-	104	156	-	-	-	-	-	-	-
Stage 2	336	156	-	409	219	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	13	402	18	13	308	518	-	-	390	-	-
Mov Cap-2 Maneuver	24	13	-	18	13	-	-	-	-	-	-	-
Stage 1	160	214	-	102	153	-	-	-	-	-	-	-
Stage 2	321	153	-	393	213	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	124.9	173.4	0	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	518	-	-	38	36	390	-	-
HCM Lane V/C Ratio	0.004	-	-	0.222	0.468	0.024	-	-
HCM Control Delay (s)	12	-	-	124.9	173.4	14.5	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.6	0.1	-	-

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	45141500
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	2788
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.99
Delay for adq Gap	45141500.00
Avg Ped Delay (s)	45141500.00

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	45141500
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	2788
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.99
Delay for adq Gap	45141500.00
Avg Ped Delay (s)	45141500.00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	3	31	81	7	28	45	1250	134	31	1009	52
Future Volume (veh/h)	26	3	31	81	7	28	45	1250	134	31	1009	52
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)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	3	32	84	7	29	47	1302	140	32	1051	54
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	29	115	196	23	50	384	2041	218	276	2142	110
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.04	0.64	0.64	0.04	0.63	0.63
Sat Flow, veh/h	564	212	828	975	164	363	1774	3212	344	1774	3417	176
Grp Volume(v), veh/h	62	0	0	120	0	0	47	714	728	32	544	561
Grp Sat Flow(s),veh/h/ln	1604	0	0	1503	0	0	1774	1770	1786	1774	1770	1823
Q Serve(g_s), s	0.0	0.0	0.0	3.8	0.0	0.0	0.9	24.7	25.1	0.6	16.6	16.6
Cycle Q Clear(g_c), s	3.3	0.0	0.0	7.1	0.0	0.0	0.9	24.7	25.1	0.6	16.6	16.6
Prop In Lane	0.44		0.52	0.70		0.24	1.00		0.19	1.00		0.10
Lane Grp Cap(c), veh/h	274	0	0	269	0	0	384	1124	1135	276	1109	1143
V/C Ratio(X)	0.23	0.00	0.00	0.45	0.00	0.00	0.12	0.64	0.64	0.12	0.49	0.49
Avail Cap(c_a), veh/h	581	0	0	566	0	0	423	1124	1135	331	1109	1143
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	0.0	40.0	0.0	0.0	7.1	11.2	11.2	9.0	10.1	10.1
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.2	0.0	0.0	0.1	2.3	2.4	0.2	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 BackOfQ(50%),veh/ln	1.6	0.0	0.0	3.2	0.0	0.0	0.4	12.6	12.9	0.3	8.5	8.7
LnGrp Delay(d),s/veh	39.0	0.0	0.0	41.1	0.0	0.0	7.2	13.5	13.6	9.2	11.6	11.6
LnGrp LOS	D			D			A	B	B	A	B	B
Approach Vol, veh/h		62			120			1489			1137	
Approach Delay, s/veh		39.0			41.1			13.3			11.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	70.0		20.0	10.8	69.2		20.0
Change Period (Y+Rc), s	6.4	6.5		* 6.2	6.4	6.5		* 6.2
Max Green Setting (Gmax), s	6.6	39.5		* 35	6.6	39.5		* 35
Max Q Clear Time (g_c+I1), s	2.6	27.1		5.3	2.9	18.6		9.1
Green Ext Time (p_c), s	0.0	10.5		1.2	0.0	16.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	50.0	50.0	50.0	50.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.80	1.85	3.00	2.96
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	62	120	1489	1137
Effct. Green for Bike (s)	12.9	12.9	66.7	66.5
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	258	258	1334	1330
Bicycle Delay (s/bike)	37.9	37.9	5.5	5.6
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.58	2.68	3.16	2.87
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	28	60	54	21	4	98	1348	49	3	1082	172
Future Volume (veh/h)	151	28	60	54	21	4	98	1348	49	3	1082	172
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	159	29	63	57	22	4	103	1419	52	3	1139	172
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	34	73	218	79	13	293	2496	91	235	1953	294
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.72	0.72	0.64	0.64	0.64
Sat Flow, veh/h	936	171	371	896	400	66	1774	3479	127	358	3073	462
Grp Volume(v), veh/h	251	0	0	83	0	0	103	721	750	3	654	657
Grp Sat Flow(s),veh/h/ln	1478	0	0	1361	0	0	1774	1770	1836	358	1770	1766
Q Serve(g_s), s	16.9	0.0	0.0	0.0	0.0	0.0	2.9	29.1	29.3	0.6	32.1	32.4
Cycle Q Clear(g_c), s	24.5	0.0	0.0	7.6	0.0	0.0	2.9	29.1	29.3	17.6	32.1	32.4
Prop In Lane	0.63		0.25	0.69		0.05	1.00		0.07	1.00		0.26
Lane Grp Cap(c), veh/h	332	0	0	310	0	0	293	1270	1318	235	1125	1122
V/C Ratio(X)	0.76	0.00	0.00	0.27	0.00	0.00	0.35	0.57	0.57	0.01	0.58	0.59
Avail Cap(c_a), veh/h	469	0	0	446	0	0	443	1270	1318	235	1125	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	0.0	0.0	51.2	0.0	0.0	13.0	10.1	10.1	17.3	15.8	15.9
Incr Delay (d2), s/veh	4.4	0.0	0.0	0.5	0.0	0.0	0.7	1.8	1.8	0.1	2.2	2.2
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 BackOfQ(50%),veh/ln	10.4	0.0	0.0	3.0	0.0	0.0	1.4	14.7	15.5	0.1	16.3	16.4
LnGrp Delay(d),s/veh	62.4	0.0	0.0	51.7	0.0	0.0	13.7	11.9	11.9	17.4	18.0	18.1
LnGrp LOS	E			D			B	B	B	B	B	B
Approach Vol, veh/h		251			83			1574			1314	
Approach Delay, s/veh		62.4			51.7			12.0			18.1	
Approach LOS		E			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.3	101.8		35.9		114.1		35.9
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	18.6	68.5		* 44		* 94		* 44
Max Q Clear Time (g_c+I1), s	4.9	34.4		26.5		31.3		9.6
Green Ext Time (p_c), s	0.2	25.9		1.9		39.1		2.2

Intersection Summary		
HCM 2010 Ctrl Delay		19.4
HCM 2010 LOS		B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.01	1.81	3.07	3.08
Pedestrian Crosswalk LOS	B	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	251	83	1574	1314
Effct. Green for Bike (s)	31.8	32.1	105.6	90.2
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	424	428	1408	1203
Bicycle Delay (s/bike)	46.6	46.3	6.6	11.9
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	2.89	2.61	3.23	3.01
Bicycle LOS	C	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	14	6	72	20	46	21	1311	69	39	986	46
Future Volume (veh/h)	38	14	6	72	20	46	21	1311	69	39	986	46
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)	0.99		0.98	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1845	1845	1900
Adj Flow Rate, veh/h	40	15	6	77	21	49	22	1395	73	41	1049	49
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	172	143	57	216	55	129	407	2587	135	285	2577	120
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1309	1260	504	1365	487	1135	511	3416	178	356	3404	159
Grp Volume(v), veh/h	40	0	21	77	0	70	22	721	747	41	540	558
Grp Sat Flow(s),veh/h/ln	1309	0	1764	1365	0	1622	511	1770	1824	356	1752	1810
Q Serve(g_s), s	2.8	0.0	1.0	5.1	0.0	3.8	1.5	15.9	16.0	5.1	10.3	10.3
Cycle Q Clear(g_c), s	6.6	0.0	1.0	6.1	0.0	3.8	11.8	15.9	16.0	21.1	10.3	10.3
Prop In Lane	1.00		0.29	1.00		0.70	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	172	0	200	216	0	184	407	1340	1382	285	1327	1371
V/C Ratio(X)	0.23	0.00	0.11	0.36	0.00	0.38	0.05	0.54	0.54	0.14	0.41	0.41
Avail Cap(c_a), veh/h	493	0	633	551	0	582	407	1340	1382	285	1327	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	42.1	0.0	37.8	40.5	0.0	39.0	6.1	4.7	4.7	9.1	4.0	4.0
Incr Delay (d2), s/veh	0.7	0.0	0.2	1.0	0.0	1.3	0.3	1.6	1.5	0.9	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.5	2.0	0.0	1.8	0.2	8.2	8.5	0.6	5.1	5.3
LnGrp Delay(d),s/veh	42.8	0.0	38.0	41.5	0.0	40.3	6.4	6.3	6.3	10.0	4.9	4.8
LnGrp LOS	D		D	D		D	A	A	A	B	A	A
Approach Vol, veh/h		61			147			1490			1139	
Approach Delay, s/veh		41.1			41.0			6.3			5.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		78.3		16.7		78.3		16.7
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		48.6		34.1		48.6		34.1
Max Q Clear Time (g_c+I1), s		18.0		8.6		23.1		8.1
Green Ext Time (p_c), s		22.9		0.9		19.9		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	47.5	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.99	2.03	2.99	2.99
Pedestrian Crosswalk LOS	A	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	61	147	1490	1139
Effct. Green for Bike (s)	10.3	10.7	75.7	75.7
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	217	225	1594	1594
Bicycle Delay (s/bike)	37.8	37.4	2.0	2.0
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.58	2.72	3.34	3.05
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	618	190	251	1341	452	277	777	204	282	653	219
Future Volume (veh/h)	245	618	190	251	1341	452	277	777	204	282	653	219
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.91	1.00		0.91	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	255	644	198	261	1397	471	289	809	212	294	680	228
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1609	480	302	1577	524	326	924	375	331	929	383
Arrive On Green	0.08	0.42	0.42	0.09	0.43	0.43	0.09	0.26	0.26	0.10	0.26	0.26
Sat Flow, veh/h	3442	3787	1131	3442	3670	1220	3442	3539	1437	3442	3539	1460
Grp Volume(v), veh/h	255	575	267	261	1289	579	289	809	212	294	680	228
Grp Sat Flow(s),veh/h/ln	1721	1695	1527	1721	1695	1500	1721	1770	1437	1721	1770	1460
Q Serve(g_s), s	14.7	23.5	24.4	15.0	70.0	71.7	16.6	43.8	25.6	16.9	35.1	27.3
Cycle Q Clear(g_c), s	14.7	23.5	24.4	15.0	70.0	71.7	16.6	43.8	25.6	16.9	35.1	27.3
Prop In Lane	1.00		0.74	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	1441	649	302	1456	644	326	924	375	331	929	383
V/C Ratio(X)	0.88	0.40	0.41	0.86	0.89	0.90	0.89	0.88	0.56	0.89	0.73	0.59
Avail Cap(c_a), veh/h	320	1441	649	454	1456	644	389	966	392	389	966	399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	90.6	39.8	40.1	90.0	52.5	53.0	89.4	70.8	64.0	89.3	67.3	64.5
Incr Delay (d2), s/veh	22.1	0.8	1.9	10.7	8.2	17.8	18.7	8.8	1.7	16.7	2.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	11.2	10.7	7.6	34.4	32.9	8.8	22.6	10.4	8.8	17.5	11.3
LnGrp Delay(d),s/veh	112.7	40.6	42.0	100.8	60.7	70.8	108.2	79.6	65.8	106.0	69.7	66.3
LnGrp LOS	F	D	D	F	E	E	F	E	E	F	E	E
Approach Vol, veh/h		1097			2129			1310			1202	
Approach Delay, s/veh		57.7			68.4			83.7			77.9	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	92.5	25.6	58.6	24.2	91.6	25.4	58.9
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	18.6	78.4	22.6	54.6	26.4	* 71	22.6	54.6
Max Q Clear Time (g_c+I1), s	16.7	73.7	18.9	45.8	17.0	26.4	18.6	37.1
Green Ext Time (p_c), s	0.2	4.4	0.4	6.4	0.6	31.3	0.4	10.7

Intersection Summary		
HCM 2010 Ctrl Delay		71.8
HCM 2010 LOS		E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	100.0	100.0	100.0	100.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.26	3.30	3.09	3.14
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1097	2129	1310	1202
Effct. Green for Bike (s)	81.5	83.8	51.3	51.5
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	815	838	513	515
Bicycle Delay (s/bike)	35.1	33.8	55.3	55.1
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.45	4.02	4.13	4.04
Bicycle LOS	C	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	1	16	1	1	1	16	1266	1	1	1171	131
Future Volume (veh/h)	152	1	16	1	1	1	16	1266	1	1	1171	131
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.97	0.99		0.93	1.00		0.93
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	1900	1845	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	155	1	16	1	1	1	16	1292	1	1	1195	134
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	3	3	3	2	2	2
Cap, veh/h	207	1	18	139	130	211	370	2732	2	306	2365	264
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.02	0.76	0.76	0.00	1.00	1.00
Sat Flow, veh/h	1242	8	128	804	946	1535	1757	3594	3	1774	3182	355
Grp Volume(v), veh/h	172	0	0	2	0	1	16	630	663	1	663	666
Grp Sat Flow(s),veh/h/ln	1378	0	0	1750	0	1535	1757	1752	1844	1774	1770	1768
Q Serve(g_s), s	23.2	0.0	0.0	0.0	0.0	0.1	0.4	25.6	25.6	0.0	0.0	0.0
Cycle Q Clear(g_c), s	23.4	0.0	0.0	0.2	0.0	0.1	0.4	25.6	25.6	0.0	0.0	0.0
Prop In Lane	0.90		0.09	0.50		1.00	1.00		0.00	1.00		0.20
Lane Grp Cap(c), veh/h	226	0	0	269	0	211	370	1332	1402	306	1315	1314
V/C Ratio(X)	0.76	0.00	0.00	0.01	0.00	0.00	0.04	0.47	0.47	0.00	0.50	0.51
Avail Cap(c_a), veh/h	322	0	0	381	0	319	458	1332	1402	426	1315	1314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.37	0.37	0.37	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.8	0.0	0.0	70.7	0.0	70.7	5.5	8.5	8.5	7.5	0.0	0.0
Incr Delay (d2), s/veh	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	1.4	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 BackOfQ(50%),veh/ln	9.3	0.0	0.0	0.1	0.0	0.0	0.2	12.4	13.1	0.0	0.5	0.5
LnGrp Delay(d),s/veh	87.3	0.0	0.0	70.7	0.0	70.7	5.5	9.0	9.0	7.5	1.4	1.4
LnGrp LOS	F			E		E	A	A	A	A	A	A
Approach Vol, veh/h		172			3			1309			1330	
Approach Delay, s/veh		87.3			70.7			8.9			1.4	
Approach LOS		F			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	147.7		31.9	7.2	150.9		31.9
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	13.0	* 1.2E2		* 40	13.1	118.5		* 39
Max Q Clear Time (g_c+I1), s	2.4	2.0		2.2	2.0	27.6		25.4
Green Ext Time (p_c), s	0.0	45.1		1.1	0.0	41.6		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.89	1.98	3.00	3.06
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	172	3	1309	1330
Effct. Green for Bike (s)	29.4	29.6	145.8	140.6
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	309	312	1535	1480
Bicycle Delay (s/bike)	67.9	67.7	5.1	6.4
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.94	2.67	3.19	3.02
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	123	12	1386	152	5	1078
Future Volume (veh/h)	123	12	1386	152	5	1078
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1900	1863	1863
Adj Flow Rate, veh/h	128	12	1444	158	5	1123
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	2	2
Cap, veh/h	165	147	2453	266	322	2759
Arrive On Green	0.09	0.09	1.00	1.00	0.78	0.78
Sat Flow, veh/h	1774	1583	3237	341	315	3632
Grp Volume(v), veh/h	128	12	790	812	5	1123
Grp Sat Flow(s),veh/h/ln	1774	1583	1736	1751	315	1770
Q Serve(g_s), s	6.7	0.7	0.0	0.0	0.3	9.7
Cycle Q Clear(g_c), s	6.7	0.7	0.0	0.0	0.3	9.7
Prop In Lane	1.00	1.00		0.19	1.00	
Lane Grp Cap(c), veh/h	165	147	1353	1365	322	2759
V/C Ratio(X)	0.78	0.08	0.58	0.59	0.02	0.41
Avail Cap(c_a), veh/h	566	505	1353	1365	322	2759
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	39.4	0.0	0.0	2.3	3.4
Incr Delay (d2), s/veh	7.6	0.2	1.8	1.9	0.1	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.3	0.7	0.7	0.0	4.9
LnGrp Delay(d),s/veh	49.7	39.6	1.8	1.9	2.4	3.8
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	140		1602			1128
Approach Delay, s/veh	48.8		1.9			3.8
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		80.5				80.5		14.5
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		52.6				52.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				11.7		8.7
Green Ext Time (p_c), s		35.0				30.1		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		4.9
HCM 2010 LOS		A

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.03	3.07	2.98
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	140	1602	1128
Effct. Green for Bike (s)	12.2	70.7	70.7
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	257	1488	1488
Bicycle Delay (s/bike)	36.1	3.1	3.1
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.71	3.45	3.41
Bicycle LOS	B	C	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	197	238	1076	946	64
Future Volume (veh/h)	75	197	238	1076	946	64
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1827	1863	1900
Adj Flow Rate, veh/h	79	207	251	1133	996	67
Adj No. of Lanes	1	1	1	2	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	4	4	2	2
Cap, veh/h	277	247	413	2480	1901	128
Arrive On Green	0.16	0.16	0.08	0.71	0.57	0.57
Sat Flow, veh/h	1774	1583	1740	3563	3451	226
Grp Volume(v), veh/h	79	207	251	1133	525	538
Grp Sat Flow(s),veh/h/ln	1774	1583	1740	1736	1770	1814
Q Serve(g_s), s	3.7	12.1	5.3	13.1	17.4	17.4
Cycle Q Clear(g_c), s	3.7	12.1	5.3	13.1	17.4	17.4
Prop In Lane	1.00	1.00	1.00			0.12
Lane Grp Cap(c), veh/h	277	247	413	2480	1002	1027
V/C Ratio(X)	0.29	0.84	0.61	0.46	0.52	0.52
Avail Cap(c_a), veh/h	527	470	485	2480	1002	1027
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	38.9	10.0	5.7	12.7	12.7
Incr Delay (d2), s/veh	0.6	7.4	1.6	0.6	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.8	2.7	6.3	9.0	9.2
LnGrp Delay(d),s/veh	36.0	46.3	11.6	6.4	14.7	14.6
LnGrp LOS	D	D	B	A	B	B
Approach Vol, veh/h	286			1384	1063	
Approach Delay, s/veh	43.5			7.3	14.6	
Approach LOS	D			A	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.1	60.3		20.6		74.4		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	11.5	36.5		* 28		54.5		
Max Q Clear Time (g_c+I1), s	7.3	19.4		14.1		15.1		
Green Ext Time (p_c), s	0.3	12.6		0.8		21.9		

Intersection Summary	
HCM 2010 Ctrl Delay	13.9
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.15	2.98	2.88
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	286	1384	1063
Effct. Green for Bike (s)	9.6	73.1	52.5
Cross Street Width (ft)	60.0	60.0	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	202	1539	1105
Bicycle Delay (s/bike)	38.4	2.5	9.5
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.95	3.62	2.99
Bicycle LOS	C	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	137	94	256	173	85	105	732	282	29	529	93
Future Volume (veh/h)	117	137	94	256	173	85	105	732	282	29	529	93
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)	0.89		0.81	0.99		0.90	1.00		0.97	1.00		0.97
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	1776	1776	1900	1863	1863	1900	1827	1827	1900	1863	1863	1900
Adj Flow Rate, veh/h	127	149	102	278	188	92	114	796	307	32	575	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	7	7	7	2	2	2	4	4	4	2	2	2
Cap, veh/h	225	171	117	324	419	205	371	1136	437	206	1353	237
Arrive On Green	0.19	0.19	0.19	0.14	0.37	0.37	0.05	0.47	0.47	0.03	0.45	0.45
Sat Flow, veh/h	925	891	610	1774	1134	555	1740	2425	934	1774	2994	524
Grp Volume(v), veh/h	127	0	251	278	0	280	114	569	534	32	339	337
Grp Sat Flow(s),veh/h/ln	925	0	1500	1774	0	1689	1740	1736	1624	1774	1770	1749
Q Serve(g_s), s	19.3	0.0	24.4	18.3	0.0	18.8	5.3	38.9	39.1	1.4	19.5	19.6
Cycle Q Clear(g_c), s	19.3	0.0	24.4	18.3	0.0	18.8	5.3	38.9	39.1	1.4	19.5	19.6
Prop In Lane	1.00		0.41	1.00		0.33	1.00		0.58	1.00		0.30
Lane Grp Cap(c), veh/h	225	0	287	324	0	624	371	813	760	206	799	790
V/C Ratio(X)	0.56	0.00	0.87	0.86	0.00	0.45	0.31	0.70	0.70	0.16	0.42	0.43
Avail Cap(c_a), veh/h	256	0	337	363	0	719	420	813	760	285	799	790
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	0.0	58.9	41.4	0.0	35.7	21.6	31.6	31.6	25.3	27.9	27.9
Incr Delay (d2), s/veh	2.2	0.0	19.3	16.7	0.0	0.5	0.5	5.0	5.4	0.3	1.6	1.7
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 BackOfQ(50%),veh/ln	5.1	0.0	11.7	10.5	0.0	8.9	2.5	19.8	18.6	0.7	9.9	9.8
LnGrp Delay(d),s/veh	59.0	0.0	78.2	58.1	0.0	36.2	22.0	36.6	37.0	25.7	29.5	29.6
LnGrp LOS	E		E	E		D	C	D	D	C	C	C
Approach Vol, veh/h		378			558			1217			708	
Approach Delay, s/veh		71.7			47.1			35.4			29.4	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	76.9	26.7	35.0	13.8	74.5		61.8
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64
Max Q Clear Time (g_c+I1), s	3.4	41.1	20.3	26.4	7.3	21.6		20.8
Green Ext Time (p_c), s	0.0	9.2	0.3	2.4	0.1	14.8		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.27	2.37	2.90	2.78
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	378	558	1217	708
Effct. Green for Bike (s)	27.2	55.4	73.3	65.3
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	363	739	977	871
Bicycle Delay (s/bike)	50.3	29.8	19.6	23.9
Bicycle Compliance	Poor	Fair	Fair	Fair
Bicycle LOS Score	3.10	3.40	3.11	2.69
Bicycle LOS	C	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	2	2	1	6	5	1026	1	43	1336	5
Future Volume (veh/h)	5	1	2	2	1	6	5	1026	1	43	1336	5
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)	0.99		1.00	0.99		1.00	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1520	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	5	1	2	2	1	6	5	1080	1	45	1406	5
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	25	25	25	2	2	2	2	2	2
Cap, veh/h	103	8	13	63	6	28	354	2952	3	471	2943	10
Arrive On Green	0.03	0.03	0.03	0.03	0.03	0.03	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	922	236	386	250	179	857	379	3628	3	519	3617	13
Grp Volume(v), veh/h	8	0	0	9	0	0	5	527	554	45	688	723
Grp Sat Flow(s),veh/h/ln	1545	0	0	1285	0	0	379	1770	1862	519	1770	1860
Q Serve(g_s), s	0.0	0.0	0.0	0.2	0.0	0.0	0.3	6.3	6.3	2.0	9.5	9.5
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.5	0.0	0.0	9.8	6.3	6.3	8.3	9.5	9.5
Prop In Lane	0.62		0.25	0.22		0.67	1.00		0.00	1.00		0.01
Lane Grp Cap(c), veh/h	123	0	0	97	0	0	354	1440	1515	471	1440	1513
V/C Ratio(X)	0.06	0.00	0.00	0.09	0.00	0.00	0.01	0.37	0.37	0.10	0.48	0.48
Avail Cap(c_a), veh/h	707	0	0	598	0	0	354	1440	1515	471	1440	1513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	0.0	37.7	0.0	0.0	3.8	2.0	2.0	3.1	2.3	2.3
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0	0.1	0.7	0.7	0.4	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.2	0.0	0.0	0.0	3.2	3.4	0.3	4.8	5.1
LnGrp Delay(d),s/veh	37.8	0.0	0.0	38.1	0.0	0.0	3.8	2.7	2.7	3.5	3.4	3.4
LnGrp LOS	D			D			A	A	A	A	A	A
Approach Vol, veh/h		8			9			1086			1456	
Approach Delay, s/veh		37.8			38.1			2.7			3.4	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		71.5		8.5		71.5		8.5
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		33.6		34.1		33.6		34.1
Max Q Clear Time (g_c+I1), s		11.8		2.3		11.5		2.5
Green Ext Time (p_c), s		16.8		0.1		17.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	3.3
HCM 2010 LOS	A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.3	60.1	60.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	40.0	40.0	40.0	40.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.73	1.74	2.95	2.97
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	8	9	1086	1456
Effct. Green for Bike (s)	6.3	6.3	76.1	76.1
Cross Street Width (ft)	60.1	60.2	24.3	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	158	158	1902	1902
Bicycle Delay (s/bike)	33.9	33.9	0.1	0.1
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.49	2.50	2.83	3.13
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1	63	66	4	27	26	930	34	14	1158	27
Future Volume (veh/h)	35	1	63	66	4	27	26	930	34	14	1158	27
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	35	1	64	67	4	27	26	939	34	14	1170	27
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	96	21	129	172	18	51	355	2377	86	424	2373	55
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.68	0.68	0.02	0.67	0.67
Sat Flow, veh/h	412	164	1024	927	141	406	1774	3482	126	1774	3533	82
Grp Volume(v), veh/h	100	0	0	98	0	0	26	477	496	14	586	611
Grp Sat Flow(s),veh/h/ln	1600	0	0	1474	0	0	1774	1770	1839	1774	1770	1845
Q Serve(g_s), s	0.0	0.0	0.0	0.5	0.0	0.0	0.5	12.9	12.9	0.3	17.9	17.9
Cycle Q Clear(g_c), s	5.9	0.0	0.0	6.4	0.0	0.0	0.5	12.9	12.9	0.3	17.9	17.9
Prop In Lane	0.35		0.64	0.68		0.28	1.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	245	0	0	240	0	0	355	1208	1255	424	1189	1239
V/C Ratio(X)	0.41	0.00	0.00	0.41	0.00	0.00	0.07	0.40	0.40	0.03	0.49	0.49
Avail Cap(c_a), veh/h	569	0	0	544	0	0	425	1208	1255	513	1189	1239
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	0.0	0.0	44.8	0.0	0.0	6.5	7.6	7.6	5.9	8.9	8.9
Incr Delay (d2), s/veh	1.1	0.0	0.0	1.1	0.0	0.0	0.1	0.9	0.9	0.0	1.5	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 BackOfQ(50%),veh/ln	2.9	0.0	0.0	2.9	0.0	0.0	0.2	6.5	6.8	0.1	9.1	9.5
LnGrp Delay(d),s/veh	45.8	0.0	0.0	45.9	0.0	0.0	6.6	8.5	8.5	6.0	10.3	10.3
LnGrp LOS	D			D			A	A	A	A	B	B
Approach Vol, veh/h		100			98			999			1211	
Approach Delay, s/veh		45.8			45.9			8.4			10.3	
Approach LOS		D			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.7	80.3		20.0	8.5	81.5		20.0
Change Period (Y+Rc), s	6.4	6.4		* 6.2	6.4	6.4		* 6.2
Max Green Setting (Gmax), s	7.6	45.6		* 38	7.6	45.6		* 38
Max Q Clear Time (g_c+I1), s	2.5	19.9		7.9	2.3	14.9		8.4
Green Ext Time (p_c), s	0.0	16.0		1.3	0.0	17.8		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	55.0	55.0	55.0	55.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.80	1.79	2.92	2.89
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	100	98	999	1211
Effct. Green for Bike (s)	11.9	11.9	80.5	77.9
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	216	216	1464	1416
Bicycle Delay (s/bike)	43.7	43.7	4.0	4.7
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.64	2.64	2.75	2.93
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	7	63	35	8	1	62	874	11	3	1249	128
Future Volume (veh/h)	115	7	63	35	8	1	62	874	11	3	1249	128
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	119	7	65	36	8	1	64	901	11	3	1288	128
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	175	8	74	186	38	4	296	2766	34	471	2256	223
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.77	0.77	0.70	0.70	0.70
Sat Flow, veh/h	951	58	521	1004	265	29	1774	3580	44	608	3244	321
Grp Volume(v), veh/h	191	0	0	45	0	0	64	445	467	3	700	716
Grp Sat Flow(s),veh/h/ln	1530	0	0	1298	0	0	1774	1770	1854	608	1770	1796
Q Serve(g_s), s	13.7	0.0	0.0	0.0	0.0	0.0	1.4	11.5	11.5	0.2	29.9	30.3
Cycle Q Clear(g_c), s	18.2	0.0	0.0	4.5	0.0	0.0	1.4	11.5	11.5	0.2	29.9	30.3
Prop In Lane	0.62		0.34	0.80		0.02	1.00		0.02	1.00		0.18
Lane Grp Cap(c), veh/h	257	0	0	228	0	0	296	1368	1433	471	1231	1249
V/C Ratio(X)	0.74	0.00	0.00	0.20	0.00	0.00	0.22	0.33	0.33	0.01	0.57	0.57
Avail Cap(c_a), veh/h	398	0	0	366	0	0	372	1368	1433	471	1231	1249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	0.0	0.0	57.0	0.0	0.0	9.3	5.2	5.2	7.0	11.5	11.6
Incr Delay (d2), s/veh	4.2	0.0	0.0	0.4	0.0	0.0	0.4	0.6	0.6	0.0	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	0.0	0.0	1.7	0.0	0.0	0.7	5.8	6.1	0.0	15.0	15.6
LnGrp Delay(d),s/veh	66.9	0.0	0.0	57.4	0.0	0.0	9.7	5.8	5.8	7.0	13.4	13.5
LnGrp LOS	E			E			A	A	A	A	B	B
Approach Vol, veh/h		191			45			976			1419	
Approach Delay, s/veh		66.9			57.4			6.0			13.4	
Approach LOS		E			E			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.6	110.8		27.6		122.4		27.6
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	11.6	83.5		* 36		* 1E2		* 36
Max Q Clear Time (g_c+I1), s	3.4	32.3		20.2		13.5		6.5
Green Ext Time (p_c), s	0.1	26.4		1.2		32.2		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.94	1.77	2.95	2.96
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	191	45	976	1419
Effct. Green for Bike (s)	24.4	24.7	113.0	102.0
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	325	329	1507	1360
Bicycle Delay (s/bike)	52.6	52.3	4.6	7.7
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.79	2.55	2.73	3.10
Bicycle LOS	C	B	B	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1	8	56	6	30	22	987	23	32	1201	28
Future Volume (veh/h)	30	1	8	56	6	30	22	987	23	32	1201	28
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)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
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	1759	1759	1900	1863	1863	1900	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	31	1	8	58	6	31	23	1018	24	33	1238	29
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	8	8	8	2	2	2	3	3	3	2	2	2
Cap, veh/h	148	13	101	176	20	101	371	2757	65	458	2785	65
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.79	0.79	0.79	0.79	0.79	0.79
Sat Flow, veh/h	1281	168	1342	1390	261	1350	431	3497	82	539	3532	83
Grp Volume(v), veh/h	31	0	9	58	0	37	23	510	532	33	620	647
Grp Sat Flow(s),veh/h/ln	1281	0	1510	1390	0	1612	431	1752	1827	539	1770	1845
Q Serve(g_s), s	2.1	0.0	0.5	3.6	0.0	2.0	1.7	7.8	7.8	1.8	10.3	10.3
Cycle Q Clear(g_c), s	4.1	0.0	0.5	4.1	0.0	2.0	11.9	7.8	7.8	9.6	10.3	10.3
Prop In Lane	1.00		0.89	1.00		0.84	1.00		0.05	1.00		0.04
Lane Grp Cap(c), veh/h	148	0	113	176	0	121	371	1382	1441	458	1395	1455
V/C Ratio(X)	0.21	0.00	0.08	0.33	0.00	0.31	0.06	0.37	0.37	0.07	0.44	0.44
Avail Cap(c_a), veh/h	538	0	572	599	0	611	371	1382	1441	458	1395	1455
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	41.3	0.0	38.7	40.7	0.0	39.4	5.0	2.8	2.8	4.3	3.1	3.1
Incr Delay (d2), s/veh	0.7	0.0	0.3	1.1	0.0	1.4	0.3	0.8	0.7	0.3	0.9	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 BackOfQ(50%),veh/ln	0.8	0.0	0.2	1.5	0.0	0.9	0.2	4.0	4.1	0.3	5.2	5.4
LnGrp Delay(d),s/veh	42.0	0.0	39.0	41.7	0.0	40.8	5.4	3.6	3.6	4.5	4.0	4.0
LnGrp LOS	D		D	D		D	A	A	A	A	A	A
Approach Vol, veh/h		40			95			1065			1300	
Approach Delay, s/veh		41.4			41.4			3.6			4.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		77.4		12.6		77.4		12.6
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		43.6		34.1		43.6		34.1
Max Q Clear Time (g_c+I1), s		13.9		6.1		12.3		6.1
Green Ext Time (p_c), s		19.7		0.5		20.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.98	1.99	2.93	2.93
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	40	95	1065	1300
Effct. Green for Bike (s)	9.0	9.3	72.1	72.1
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	200	207	1602	1602
Bicycle Delay (s/bike)	36.5	36.2	1.8	1.8
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.55	2.63	2.99	3.18
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	1188	195	190	626	232	201	482	233	365	726	186
Future Volume (veh/h)	176	1188	195	190	626	232	201	482	233	365	726	186
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	185	1251	205	200	659	244	212	507	245	384	764	196
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	1977	324	236	1649	598	250	760	331	430	945	407
Arrive On Green	0.07	0.45	0.45	0.07	0.46	0.46	0.07	0.22	0.22	0.13	0.27	0.27
Sat Flow, veh/h	3442	4385	718	3408	3616	1312	3408	3505	1527	3408	3505	1510
Grp Volume(v), veh/h	185	967	489	200	611	292	212	507	245	384	764	196
Grp Sat Flow(s),veh/h/ln	1721	1695	1713	1704	1679	1571	1704	1752	1527	1704	1752	1510
Q Serve(g_s), s	10.1	41.7	41.7	11.0	23.0	23.6	11.7	25.2	28.4	21.1	38.7	20.7
Cycle Q Clear(g_c), s	10.1	41.7	41.7	11.0	23.0	23.6	11.7	25.2	28.4	21.1	38.7	20.7
Prop In Lane	1.00		0.42	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	1529	772	236	1531	716	250	760	331	430	945	407
V/C Ratio(X)	0.82	0.63	0.63	0.85	0.40	0.41	0.85	0.67	0.74	0.89	0.81	0.48
Avail Cap(c_a), veh/h	355	1529	772	276	1531	716	316	897	391	567	1155	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Uniform Delay (d), s/veh	87.7	40.1	40.1	87.4	34.4	34.5	87.0	68.1	69.4	81.7	64.8	58.2
Incr Delay (d2), s/veh	8.4	2.0	3.9	18.8	0.8	1.7	16.0	1.5	6.1	9.6	2.4	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 BackOfQ(50%),veh/ln	5.1	19.9	20.5	5.8	10.9	10.6	6.1	12.3	12.6	10.5	19.1	8.7
LnGrp Delay(d),s/veh	96.1	42.1	44.0	106.2	35.2	36.3	103.0	69.6	75.5	91.3	67.2	58.8
LnGrp LOS	F	D	D	F	D	D	F	E	E	F	E	E
Approach Vol, veh/h		1641			1103			964			1344	
Approach Delay, s/veh		48.7			48.3			78.5			72.9	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	93.2	30.4	47.6	19.8	92.3	20.3	57.7
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	19.6	64.4	31.6	48.6	15.4	* 69	17.6	62.6
Max Q Clear Time (g_c+I1), s	12.1	25.6	23.1	30.4	13.0	43.7	13.7	40.7
Green Ext Time (p_c), s	0.3	23.6	0.9	9.5	0.1	17.6	0.2	10.6

Intersection Summary	
HCM 2010 Ctrl Delay	60.7
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.21	3.25	3.03	3.06
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1641	1103	964	1344
Effct. Green for Bike (s)	82.3	83.0	39.2	49.6
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	866	874	413	522
Bicycle Delay (s/bike)	30.5	30.1	59.8	51.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.75	3.45	3.85	4.16
Bicycle LOS	D	C	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	1	8	1	1	1	13	801	1	44	1236	201
Future Volume (veh/h)	149	1	8	1	1	1	13	801	1	44	1236	201
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.94	0.99		0.94
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	1900	1863	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	160	1	9	1	1	1	14	861	1	47	1329	216
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	275	1	11	171	152	235	196	2129	2	456	1871	300
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.02	0.59	0.59	0.03	0.41	0.41
Sat Flow, veh/h	1325	8	75	747	1022	1580	1757	3592	4	1774	3028	486
Grp Volume(v), veh/h	170	0	0	2	0	1	14	420	442	47	770	775
Grp Sat Flow(s),veh/h/ln	1408	0	0	1770	0	1580	1757	1752	1844	1774	1770	1744
Q Serve(g_s), s	10.5	0.0	0.0	0.0	0.0	0.0	0.3	11.6	11.6	0.9	32.4	33.4
Cycle Q Clear(g_c), s	10.5	0.0	0.0	0.1	0.0	0.0	0.3	11.6	11.6	0.9	32.4	33.4
Prop In Lane	0.94		0.05	0.50		1.00	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	287	0	0	324	0	235	196	1039	1093	456	1094	1078
V/C Ratio(X)	0.59	0.00	0.00	0.01	0.00	0.00	0.07	0.40	0.40	0.10	0.70	0.72
Avail Cap(c_a), veh/h	490	0	0	556	0	465	298	1039	1093	514	1094	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	0.0	32.6	0.0	32.6	12.4	9.8	9.8	6.9	19.6	19.9
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.0	0.0	0.0	0.1	0.8	0.7	0.1	3.8	4.2
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 BackOfQ(50%),veh/ln	4.3	0.0	0.0	0.0	0.0	0.0	0.1	5.7	6.0	0.4	17.0	17.3
LnGrp Delay(d),s/veh	39.0	0.0	0.0	32.6	0.0	32.6	12.5	10.6	10.6	7.0	23.4	24.0
LnGrp LOS	D			C		C	B	B	B	A	C	C
Approach Vol, veh/h		170			3			876			1592	
Approach Delay, s/veh		39.0			32.6			10.6			23.2	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	62.1		19.1	11.0	59.8		19.1
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	7.0	* 38		* 27	7.1	37.5		* 26
Max Q Clear Time (g_c+I1), s	2.3	35.4		2.1	2.9	13.6		12.5
Green Ext Time (p_c), s	0.0	2.0		1.0	0.0	17.5		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.89	1.96	2.89	2.99
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	170	3	876	1592
Effct. Green for Bike (s)	16.3	16.5	53.2	58.9
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	362	367	1182	1309
Bicycle Delay (s/bike)	30.2	30.0	7.5	5.4
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.94	2.67	2.83	3.24
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	175	14	63	818	125	13	1201
Future Volume (veh/h)	175	14	63	818	125	13	1201
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			0.97	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1845	1900	1845	1845
Adj Flow Rate, veh/h	184	15		861	132	14	1264
Adj No. of Lanes	1	1		2	0	1	2
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2		3	3	3	3
Cap, veh/h	227	203		2237	343	492	2585
Arrive On Green	0.13	0.13		1.00	1.00	0.74	0.74
Sat Flow, veh/h	1774	1583		3126	465	558	3597
Grp Volume(v), veh/h	184	15		497	496	14	1264
Grp Sat Flow(s),veh/h/ln	1774	1583		1752	1746	558	1752
Q Serve(g_s), s	9.1	0.8		0.0	0.0	0.6	13.3
Cycle Q Clear(g_c), s	9.1	0.8		0.0	0.0	0.6	13.3
Prop In Lane	1.00	1.00			0.27	1.00	
Lane Grp Cap(c), veh/h	227	203		1292	1288	492	2585
V/C Ratio(X)	0.81	0.07		0.38	0.38	0.03	0.49
Avail Cap(c_a), veh/h	597	533		1292	1288	492	2585
HCM Platoon Ratio	1.00	1.00		2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.2	34.5		0.0	0.0	3.2	4.9
Incr Delay (d2), s/veh	6.8	0.2		0.9	0.9	0.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.3		0.3	0.3	0.1	6.6
LnGrp Delay(d),s/veh	44.9	34.7		0.9	0.9	3.3	5.5
LnGrp LOS	D	C		A	A	A	A
Approach Vol, veh/h	199			993			1278
Approach Delay, s/veh	44.2			0.9			5.5
Approach LOS	D			A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		72.8				72.8		17.2
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		47.6				47.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				15.3		11.1
Green Ext Time (p_c), s		25.2				20.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Notes

User approved ignoring U-Turning movement.

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.04	2.98	2.87
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	199	1059	1278
Effct. Green for Bike (s)	14.7	63.2	63.2
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	327	1404	1404
Bicycle Delay (s/bike)	31.5	4.0	4.0
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.81	3.00	3.53
Bicycle LOS	C	C	D

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	65	225	179	689	49	963	56
Future Volume (veh/h)	65	225	179	689	49	963	56
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845		1846	1900
Adj Flow Rate, veh/h	67	232	185	710		993	58
Adj No. of Lanes	1	1	1	2		2	0
Peak Hour Factor	0.97	0.97	0.97	0.97		0.97	0.97
Percent Heavy Veh, %	2	2	3	3		3	3
Cap, veh/h	307	274	388	2420		1855	108
Arrive On Green	0.17	0.17	0.07	0.69		0.55	0.55
Sat Flow, veh/h	1774	1583	1757	3597		3453	196
Grp Volume(v), veh/h	67	232	185	710		518	533
Grp Sat Flow(s),veh/h/ln	1774	1583	1757	1752		1753	1803
Q Serve(g_s), s	2.9	12.8	3.8	7.1		16.9	16.9
Cycle Q Clear(g_c), s	2.9	12.8	3.8	7.1		16.9	16.9
Prop In Lane	1.00	1.00	1.00				0.11
Lane Grp Cap(c), veh/h	307	274	388	2420		968	996
V/C Ratio(X)	0.22	0.85	0.48	0.29		0.54	0.54
Avail Cap(c_a), veh/h	556	496	419	2420		968	996
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	32.0	36.1	9.6	5.4		12.8	12.8
Incr Delay (d2), s/veh	0.4	7.1	0.9	0.3		2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.1	1.9	3.5		8.6	8.9
LnGrp Delay(d),s/veh	32.3	43.2	10.5	5.7		14.9	14.9
LnGrp LOS	C	D	B	A		B	B
Approach Vol, veh/h	299			895		1051	
Approach Delay, s/veh	40.8			6.7		14.9	
Approach LOS	D			A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.4	56.2		21.4		68.6		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	7.5	35.5		* 28		49.5		
Max Q Clear Time (g_c+I1), s	5.8	18.9		14.8		9.1		
Green Ext Time (p_c), s	0.1	10.1		0.8		15.9		

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

Notes

User approved ignoring U-Turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	59.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.13	2.86	2.77
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	299	895	1104
Effct. Green for Bike (s)	9.3	68.4	51.1
Cross Street Width (ft)	60.0	59.2	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	207	1520	1136
Bicycle Delay (s/bike)	36.2	2.6	8.4
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.97	3.20	3.02
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	107	129	262	121	58	99	516	144	16	604	57
Future Volume (veh/h)	95	107	129	262	121	58	99	516	144	16	604	57
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)	0.95		0.93	0.99		0.97	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1845	1845	1900	1827	1827	1900
Adj Flow Rate, veh/h	99	111	134	273	126	60	103	538	150	17	629	59
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	251	131	158	328	421	200	378	1320	366	350	1506	141
Arrive On Green	0.18	0.18	0.18	0.14	0.36	0.36	0.04	0.49	0.49	0.02	0.47	0.47
Sat Flow, veh/h	1139	735	887	1774	1181	562	1757	2690	746	1740	3205	300
Grp Volume(v), veh/h	99	0	245	273	0	186	103	350	338	17	340	348
Grp Sat Flow(s),veh/h/ln	1139	0	1623	1774	0	1743	1757	1752	1683	1740	1736	1770
Q Serve(g_s), s	11.7	0.0	21.9	18.3	0.0	11.5	4.5	19.0	19.2	0.8	19.4	19.4
Cycle Q Clear(g_c), s	11.7	0.0	21.9	18.3	0.0	11.5	4.5	19.0	19.2	0.8	19.4	19.4
Prop In Lane	1.00		0.55	1.00		0.32	1.00		0.44	1.00		0.17
Lane Grp Cap(c), veh/h	251	0	290	328	0	621	378	860	826	350	816	832
V/C Ratio(X)	0.39	0.00	0.85	0.83	0.00	0.30	0.27	0.41	0.41	0.05	0.42	0.42
Avail Cap(c_a), veh/h	304	0	365	367	0	743	436	860	826	443	816	832
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	0.0	59.6	42.3	0.0	34.8	20.3	24.3	24.4	20.6	26.2	26.2
Incr Delay (d2), s/veh	1.0	0.0	13.8	13.9	0.0	0.3	0.4	1.4	1.5	0.1	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 BackOfQ(50%),veh/ln	3.8	0.0	11.0	10.2	0.0	5.6	2.2	9.6	9.3	0.4	9.6	9.8
LnGrp Delay(d),s/veh	56.4	0.0	73.4	56.2	0.0	35.0	20.7	25.7	25.9	20.6	27.8	27.8
LnGrp LOS	E		E	E		D	C	C	C	C	C	C
Approach Vol, veh/h		344			459			791			705	
Approach Delay, s/veh		68.5			47.6			25.1			27.6	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.9	80.3	26.7	33.1	13.0	77.2		59.8
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64
Max Q Clear Time (g_c+I1), s	2.8	21.2	20.3	23.9	6.5	21.4		13.5
Green Ext Time (p_c), s	0.0	10.0	0.3	2.1	0.1	10.0		3.3

Intersection Summary		
HCM 2010 Ctrl Delay		36.9
HCM 2010 LOS		D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.21	2.25	2.81	2.69
Pedestrian Crosswalk LOS	B	B	C	B

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	344	459	791	705
Effct. Green for Bike (s)	24.6	53.0	78.8	68.2
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	328	707	1051	909
Bicycle Delay (s/bike)	52.4	31.4	16.9	22.3
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.05	3.23	2.76	2.69
Bicycle LOS	C	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	4	6	1	9	5	1538	7	43	1250	3
Future Volume (veh/h)	3	1	4	6	1	9	5	1538	7	43	1250	3
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)	0.98		0.96	0.98		0.98	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	1	4	6	1	9	5	1619	7	45	1316	3
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	30	50	76	23	56	364	2889	12	276	2896	7
Arrive On Green	0.06	0.06	0.06	0.06	0.06	0.06	0.80	0.80	0.80	0.80	0.80	0.80
Sat Flow, veh/h	320	467	788	325	364	885	414	3613	16	309	3622	8
Grp Volume(v), veh/h	8	0	0	16	0	0	5	793	833	45	643	676
Grp Sat Flow(s),veh/h/ln	1575	0	0	1574	0	0	414	1770	1859	309	1770	1861
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.3	14.6	14.7	5.6	10.3	10.3
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.8	0.0	0.0	10.6	14.6	14.7	20.2	10.3	10.3
Prop In Lane	0.37		0.50	0.37		0.56	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	156	0	0	155	0	0	364	1415	1487	276	1415	1488
V/C Ratio(X)	0.05	0.00	0.00	0.10	0.00	0.00	0.01	0.56	0.56	0.16	0.45	0.45
Avail Cap(c_a), veh/h	628	0	0	628	0	0	364	1415	1487	276	1415	1488
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	0.0	0.0	39.8	0.0	0.0	4.5	3.3	3.3	7.0	2.8	2.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0	0.1	1.6	1.5	1.3	1.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.4	0.0	0.0	0.0	7.5	7.8	0.6	5.2	5.5
LnGrp Delay(d),s/veh	39.8	0.0	0.0	40.1	0.0	0.0	4.6	4.9	4.8	8.2	3.9	3.8
LnGrp LOS	D			D			A	A	A	A	A	A
Approach Vol, veh/h		8			16			1631			1364	
Approach Delay, s/veh		39.8			40.1			4.8			4.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		78.4		11.6		78.4		11.6
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		43.6		34.1		43.6		34.1
Max Q Clear Time (g_c+I1), s		16.7		2.4		22.2		2.8
Green Ext Time (p_c), s		23.0		0.1		18.7		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.7
HCM 2010 LOS	A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.3	60.1	60.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.73	1.75	3.08	3.09
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	8	16	1631	1364
Effct. Green for Bike (s)	6.4	6.4	82.3	82.3
Cross Street Width (ft)	60.1	60.2	24.3	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	142	142	1829	1829
Bicycle Delay (s/bike)	38.8	38.8	0.3	0.3
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.49	2.51	3.28	3.05
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	3	31	81	7	28	50	1250	134	36	1009	52
Future Volume (veh/h)	26	3	31	81	7	28	50	1250	134	36	1009	52
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)	0.99		0.97	0.99		0.97	1.00		0.96	1.00		0.96
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	3	32	84	7	29	52	1302	140	38	1051	54
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	29	115	196	23	50	386	2029	217	281	2135	110
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.05	0.63	0.63	0.04	0.62	0.62
Sat Flow, veh/h	564	212	828	975	164	363	1774	3212	344	1774	3417	176
Grp Volume(v), veh/h	62	0	0	120	0	0	52	714	728	38	544	561
Grp Sat Flow(s),veh/h/ln	1604	0	0	1503	0	0	1774	1770	1786	1774	1770	1823
Q Serve(g_s), s	0.0	0.0	0.0	3.8	0.0	0.0	1.0	24.9	25.3	0.7	16.7	16.7
Cycle Q Clear(g_c), s	3.3	0.0	0.0	7.1	0.0	0.0	1.0	24.9	25.3	0.7	16.7	16.7
Prop In Lane	0.44		0.52	0.70		0.24	1.00		0.19	1.00		0.10
Lane Grp Cap(c), veh/h	274	0	0	269	0	0	386	1117	1128	281	1106	1139
V/C Ratio(X)	0.23	0.00	0.00	0.45	0.00	0.00	0.13	0.64	0.65	0.14	0.49	0.49
Avail Cap(c_a), veh/h	581	0	0	566	0	0	422	1117	1128	328	1106	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.84	0.84	0.84	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	0.0	40.0	0.0	0.0	7.1	11.4	11.5	9.2	10.2	10.2
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.2	0.0	0.0	0.1	2.4	2.4	0.2	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 BackOfQ(50%),veh/ln	1.6	0.0	0.0	3.2	0.0	0.0	0.5	12.8	13.1	0.4	8.5	8.7
LnGrp Delay(d),s/veh	39.0	0.0	0.0	41.1	0.0	0.0	7.3	13.8	13.9	9.4	11.7	11.7
LnGrp LOS	D			D			A	B	B	A	B	B
Approach Vol, veh/h		62			120			1494			1143	
Approach Delay, s/veh		39.0			41.1			13.6			11.6	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	69.6		20.0	11.0	69.0		20.0
Change Period (Y+Rc), s	6.4	6.5		* 6.2	6.4	6.5		* 6.2
Max Green Setting (Gmax), s	6.6	39.5		* 35	6.6	39.5		* 35
Max Q Clear Time (g_c+I1), s	2.7	27.3		5.3	3.0	18.7		9.1
Green Ext Time (p_c), s	0.0	10.3		1.2	0.0	16.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	50.0	50.0	50.0	50.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.80	1.85	3.01	2.96
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	62	120	1494	1143
Effct. Green for Bike (s)	12.9	12.9	66.6	64.0
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	258	258	1332	1280
Bicycle Delay (s/bike)	37.9	37.9	5.6	6.5
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.58	2.68	3.16	2.87
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	28	60	54	21	4	132	1348	49	4	1082	172
Future Volume (veh/h)	151	28	60	54	21	4	132	1348	49	4	1082	172
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	159	29	63	57	22	4	139	1419	52	4	1139	172
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	224	34	73	218	79	13	295	2496	91	235	1947	293
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.72	0.72	0.63	0.63	0.63
Sat Flow, veh/h	936	171	371	896	400	66	1774	3479	127	358	3073	462
Grp Volume(v), veh/h	251	0	0	83	0	0	139	721	750	4	654	657
Grp Sat Flow(s),veh/h/ln	1478	0	0	1361	0	0	1774	1770	1836	358	1770	1766
Q Serve(g_s), s	16.9	0.0	0.0	0.0	0.0	0.0	4.0	29.1	29.3	0.8	32.2	32.6
Cycle Q Clear(g_c), s	24.5	0.0	0.0	7.6	0.0	0.0	4.0	29.1	29.3	17.5	32.2	32.6
Prop In Lane	0.63		0.25	0.69		0.05	1.00		0.07	1.00		0.26
Lane Grp Cap(c), veh/h	332	0	0	310	0	0	295	1270	1318	235	1121	1119
V/C Ratio(X)	0.76	0.00	0.00	0.27	0.00	0.00	0.47	0.57	0.57	0.02	0.58	0.59
Avail Cap(c_a), veh/h	469	0	0	446	0	0	442	1270	1318	235	1121	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	0.0	0.0	51.2	0.0	0.0	13.9	10.1	10.1	17.3	16.0	16.0
Incr Delay (d2), s/veh	4.4	0.0	0.0	0.5	0.0	0.0	1.2	1.8	1.8	0.1	2.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	0.0	0.0	3.0	0.0	0.0	2.1	14.7	15.5	0.1	16.3	16.4
LnGrp Delay(d),s/veh	62.4	0.0	0.0	51.7	0.0	0.0	15.0	11.9	11.9	17.4	18.2	18.3
LnGrp LOS	E			D			B	B	B	B	B	B
Approach Vol, veh/h		251			83			1610			1315	
Approach Delay, s/veh		62.4			51.7			12.2			18.3	
Approach LOS		E			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.6	101.5		35.9		114.1		35.9
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	18.6	68.5		* 44		* 94		* 44
Max Q Clear Time (g_c+I1), s	6.0	34.6		26.5		31.3		9.6
Green Ext Time (p_c), s	0.3	25.8		1.9		39.2		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	4	3	4	6
Ped. Right-Left Flow Rate (p/h)	4	3	4	6
Ped. R. Sidewalk Flow Rate (p/h)	5	6	1	2
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	3435.7	3002.3	4816.2	3271.0
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.03	1.81	3.08	3.08
Pedestrian Crosswalk LOS	B	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	1	3
Total Flow Rate (veh/h)	251	83	1610	1315
Effct. Green for Bike (s)	31.8	32.1	105.6	88.0
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	424	428	1408	1173
Bicycle Delay (s/bike)	46.6	46.3	6.6	12.8
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	2.89	2.61	3.26	3.01
Bicycle LOS	C	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	14	6	72	20	46	94	1311	69	43	986	46
Future Volume (veh/h)	38	14	6	72	20	46	94	1311	69	43	986	46
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)	0.99		0.98	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1845	1845	1900
Adj Flow Rate, veh/h	40	15	6	77	21	49	100	1395	73	46	1049	49
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	172	143	57	216	55	129	407	2587	135	285	2577	120
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1309	1260	504	1365	487	1135	511	3416	178	356	3404	159
Grp Volume(v), veh/h	40	0	21	77	0	70	100	721	747	46	540	558
Grp Sat Flow(s),veh/h/ln	1309	0	1764	1365	0	1622	511	1770	1824	356	1752	1810
Q Serve(g_s), s	2.8	0.0	1.0	5.1	0.0	3.8	8.1	15.9	16.0	5.8	10.3	10.3
Cycle Q Clear(g_c), s	6.6	0.0	1.0	6.1	0.0	3.8	18.4	15.9	16.0	21.8	10.3	10.3
Prop In Lane	1.00		0.29	1.00		0.70	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	172	0	200	216	0	184	407	1340	1382	285	1327	1371
V/C Ratio(X)	0.23	0.00	0.11	0.36	0.00	0.38	0.25	0.54	0.54	0.16	0.41	0.41
Avail Cap(c_a), veh/h	493	0	633	551	0	582	407	1340	1382	285	1327	1371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	42.1	0.0	37.8	40.5	0.0	39.0	7.3	4.7	4.7	9.2	4.0	4.0
Incr Delay (d2), s/veh	0.7	0.0	0.2	1.0	0.0	1.3	1.4	1.6	1.5	1.0	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.5	2.0	0.0	1.8	1.3	8.2	8.5	0.6	5.1	5.3
LnGrp Delay(d),s/veh	42.8	0.0	38.0	41.5	0.0	40.3	8.7	6.3	6.3	10.3	4.8	4.8
LnGrp LOS	D		D	D		D	A	A	A	B	A	A
Approach Vol, veh/h		61			147			1568			1144	
Approach Delay, s/veh		41.1			41.0			6.4			5.1	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		78.3		16.7		78.3		16.7
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		48.6		34.1		48.6		34.1
Max Q Clear Time (g_c+I1), s		20.4		8.6		23.8		8.1
Green Ext Time (p_c), s		22.3		0.9		20.1		0.9

Intersection Summary		
HCM 2010 Ctrl Delay		8.4
HCM 2010 LOS		A

Notes

User approved pedestrian interval to be less than phase max green.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	3	5	5	13
Ped. Right-Left Flow Rate (p/h)	3	5	5	13
Ped. R. Sidewalk Flow Rate (p/h)	11	7	2	6
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	2682.4	1670.5	3286.6	1893.4
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.1	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.01	2.03	3.01	3.00
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	61	147	1568	1144
Effct. Green for Bike (s)	10.3	10.7	75.7	75.7
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	217	225	1594	1594
Bicycle Delay (s/bike)	37.8	37.4	2.0	2.0
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.58	2.72	3.41	3.05
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	618	190	251	1341	452	282	777	201	287	653	219
Future Volume (veh/h)	245	618	190	251	1341	452	282	777	201	287	653	219
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.91	1.00		0.91	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	255	644	198	261	1397	471	294	809	209	299	680	228
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	1604	479	302	1572	522	331	924	375	336	929	383
Arrive On Green	0.08	0.42	0.42	0.09	0.43	0.43	0.10	0.26	0.26	0.10	0.26	0.26
Sat Flow, veh/h	3442	3787	1131	3442	3670	1220	3442	3539	1437	3442	3539	1460
Grp Volume(v), veh/h	255	575	267	261	1289	579	294	809	209	299	680	228
Grp Sat Flow(s),veh/h/ln	1721	1695	1527	1721	1695	1500	1721	1770	1437	1721	1770	1460
Q Serve(g_s), s	14.7	23.5	24.5	15.0	70.1	71.9	16.9	43.8	25.1	17.2	35.1	27.3
Cycle Q Clear(g_c), s	14.7	23.5	24.5	15.0	70.1	71.9	16.9	43.8	25.1	17.2	35.1	27.3
Prop In Lane	1.00		0.74	1.00		0.81	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	1436	647	302	1452	642	331	924	375	336	929	383
V/C Ratio(X)	0.88	0.40	0.41	0.86	0.89	0.90	0.89	0.88	0.56	0.89	0.73	0.59
Avail Cap(c_a), veh/h	320	1436	647	454	1452	642	389	966	392	389	966	399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	90.6	40.0	40.3	90.0	52.7	53.3	89.3	70.8	63.9	89.2	67.3	64.5
Incr Delay (d2), s/veh	22.1	0.8	1.9	10.7	8.4	18.2	19.3	8.8	1.6	17.2	2.3	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	11.2	10.7	7.6	34.5	33.0	8.9	22.6	10.1	9.0	17.5	11.3
LnGrp Delay(d),s/veh	112.7	40.8	42.2	100.8	61.2	71.5	108.6	79.6	65.5	106.4	69.7	66.3
LnGrp LOS	F	D	D	F	E	E	F	E	E	F	E	E
Approach Vol, veh/h		1097			2129			1312			1207	
Approach Delay, s/veh		57.9			68.8			83.8			78.1	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	92.2	25.9	58.6	24.2	91.3	25.6	58.9
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	18.6	78.4	22.6	54.6	26.4	* 71	22.6	54.6
Max Q Clear Time (g_c+I1), s	16.7	73.9	19.2	45.8	17.0	26.5	18.9	37.1
Green Ext Time (p_c), s	0.2	4.2	0.3	6.4	0.6	31.3	0.4	10.7

Intersection Summary	
HCM 2010 Ctrl Delay	72.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	37	42	35	32
Ped. Right-Left Flow Rate (p/h)	37	42	35	32
Ped. R. Sidewalk Flow Rate (p/h)	52	15	19	60
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	326.0	390.5	365.8	324.6
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	100.0	100.0	100.0	100.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.26	3.30	3.09	3.15
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	8	6	0	1
Total Flow Rate (veh/h)	1097	2129	1312	1207
Effct. Green for Bike (s)	81.3	83.6	51.3	51.5
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	813	836	513	515
Bicycle Delay (s/bike)	35.4	34.0	55.3	55.2
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.45	4.02	4.13	4.05
Bicycle LOS	C	D	D	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	1	16	1	1	1	18	1266	1	26	1171	131
Future Volume (veh/h)	152	1	16	1	1	1	18	1266	1	26	1171	131
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.98	0.99		0.97	0.99		0.93	1.00		0.93
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	1900	1845	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	155	1	16	1	1	1	18	1292	1	27	1195	134
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	3	3	3	2	2	2
Cap, veh/h	207	1	18	139	130	211	370	2651	2	331	2360	264
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.02	0.74	0.74	0.05	1.00	1.00
Sat Flow, veh/h	1242	8	128	804	946	1535	1757	3594	3	1774	3182	355
Grp Volume(v), veh/h	172	0	0	2	0	1	18	630	663	27	663	666
Grp Sat Flow(s),veh/h/ln	1378	0	0	1750	0	1535	1757	1752	1844	1774	1770	1767
Q Serve(g_s), s	23.2	0.0	0.0	0.0	0.0	0.1	0.5	28.0	28.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	23.4	0.0	0.0	0.2	0.0	0.1	0.5	28.0	28.0	0.7	0.0	0.0
Prop In Lane	0.90		0.09	0.50		1.00	1.00		0.00	1.00		0.20
Lane Grp Cap(c), veh/h	226	0	0	269	0	211	370	1293	1360	331	1313	1311
V/C Ratio(X)	0.76	0.00	0.00	0.01	0.00	0.00	0.05	0.49	0.49	0.08	0.50	0.51
Avail Cap(c_a), veh/h	322	0	0	381	0	319	456	1293	1360	411	1313	1311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.36	0.36	0.36	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.8	0.0	0.0	70.7	0.0	70.7	5.7	10.2	10.2	7.5	0.0	0.0
Incr Delay (d2), s/veh	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.1	1.4	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 BackOfQ(50%),veh/ln	9.3	0.0	0.0	0.1	0.0	0.0	0.2	13.6	14.4	0.3	0.5	0.5
LnGrp Delay(d),s/veh	87.3	0.0	0.0	70.7	0.0	70.7	5.7	10.7	10.7	7.6	1.4	1.4
LnGrp LOS	F			E		E	A	B	B	A	A	A
Approach Vol, veh/h		172			3			1311			1356	
Approach Delay, s/veh		87.3			70.7			10.6			1.5	
Approach LOS		F			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	147.5		31.9	11.5	146.7		31.9
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	13.0	* 1.2E2		* 40	13.1	118.5		* 39
Max Q Clear Time (g_c+I1), s	2.5	2.0		2.2	2.7	30.0		25.4
Green Ext Time (p_c), s	0.0	45.1		1.1	0.0	41.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	43	31
Ped. Right-Left Flow Rate (p/h)	0	0	43	31
Ped. R. Sidewalk Flow Rate (p/h)	32	42	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	574.5	665.6	788.3	1116.4
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	F	F
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.89	1.99	3.00	3.07
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	1	15	9
Total Flow Rate (veh/h)	172	3	1311	1356
Effct. Green for Bike (s)	29.4	29.6	137.7	140.5
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	309	312	1449	1479
Bicycle Delay (s/bike)	67.9	67.7	7.3	6.5
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.94	2.67	3.19	3.05
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	123	12	60	1386	152	25	1078
Future Volume (veh/h)	123	12	60	1386	152	25	1078
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			0.96	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1828	1900	1863	1863
Adj Flow Rate, veh/h	128	12		1444	158	26	1123
Adj No. of Lanes	1	1		2	0	1	2
Peak Hour Factor	0.96	0.96		0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2		4	4	2	2
Cap, veh/h	165	147		2454	266	322	2759
Arrive On Green	0.09	0.09		1.00	1.00	0.78	0.78
Sat Flow, veh/h	1774	1583		3239	341	315	3632
Grp Volume(v), veh/h	128	12		790	812	26	1123
Grp Sat Flow(s),veh/h/ln	1774	1583		1736	1752	315	1770
Q Serve(g_s), s	6.7	0.7		0.0	0.0	1.9	9.7
Cycle Q Clear(g_c), s	6.7	0.7		0.0	0.0	1.9	9.7
Prop In Lane	1.00	1.00			0.19	1.00	
Lane Grp Cap(c), veh/h	165	147		1354	1366	322	2759
V/C Ratio(X)	0.78	0.08		0.58	0.59	0.08	0.41
Avail Cap(c_a), veh/h	566	505		1354	1366	322	2759
HCM Platoon Ratio	1.00	1.00		2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	39.4		0.0	0.0	2.5	3.4
Incr Delay (d2), s/veh	7.6	0.2		1.8	1.9	0.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.3		0.7	0.7	0.2	4.9
LnGrp Delay(d),s/veh	49.7	39.6		1.8	1.9	3.0	3.8
LnGrp LOS	D	D		A	A	A	A
Approach Vol, veh/h	140			1602			1149
Approach Delay, s/veh	48.8			1.9			3.8
Approach LOS	D			A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		80.5				80.5		14.5
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		52.6				52.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				11.7		8.7
Green Ext Time (p_c), s		35.7				30.6		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		4.9
HCM 2010 LOS		A

Notes

User approved ignoring U-Turning movement.

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	6	9
Ped. Right-Left Flow Rate (p/h)	0	6	9
Ped. R. Sidewalk Flow Rate (p/h)	32	11	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	1447.3	3154.1	2400.3
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.04	3.11	2.99
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	1	3	3
Total Flow Rate (veh/h)	140	1665	1149
Effct. Green for Bike (s)	12.2	70.7	70.7
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	257	1488	1488
Bicycle Delay (s/bike)	36.1	3.1	3.1
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.71	3.50	3.43
Bicycle LOS	B	D	C

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	75	197	245	1076	15	946	64
Future Volume (veh/h)	75	197	245	1076	15	946	64
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1827		1863	1900
Adj Flow Rate, veh/h	79	207	258	1133		996	67
Adj No. of Lanes	1	1	1	2		2	0
Peak Hour Factor	0.95	0.95	0.95	0.95		0.95	0.95
Percent Heavy Veh, %	2	2	4	4		2	2
Cap, veh/h	277	247	415	2480		1895	127
Arrive On Green	0.16	0.16	0.08	0.71		0.56	0.56
Sat Flow, veh/h	1774	1583	1740	3563		3451	226
Grp Volume(v), veh/h	79	207	258	1133		525	538
Grp Sat Flow(s),veh/h/ln	1774	1583	1740	1736		1770	1814
Q Serve(g_s), s	3.7	12.1	5.5	13.1		17.5	17.5
Cycle Q Clear(g_c), s	3.7	12.1	5.5	13.1		17.5	17.5
Prop In Lane	1.00	1.00	1.00				0.12
Lane Grp Cap(c), veh/h	277	247	415	2480		999	1024
V/C Ratio(X)	0.29	0.84	0.62	0.46		0.53	0.53
Avail Cap(c_a), veh/h	527	470	483	2480		999	1024
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	35.4	38.9	10.2	5.7		12.8	12.8
Incr Delay (d2), s/veh	0.6	7.4	1.9	0.6		2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.8	2.9	6.3		9.0	9.2
LnGrp Delay(d),s/veh	36.0	46.3	12.0	6.4		14.8	14.7
LnGrp LOS	D	D	B	A		B	B
Approach Vol, veh/h	286			1391		1063	
Approach Delay, s/veh	43.5			7.4		14.8	
Approach LOS	D			A		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.3	60.1		20.6		74.4		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	11.5	36.5		* 28		54.5		
Max Q Clear Time (g_c+I1), s	7.5	19.5		14.1		15.1		
Green Ext Time (p_c), s	0.3	12.5		0.8		21.9		

Intersection Summary		
HCM 2010 Ctrl Delay		14.0
HCM 2010 LOS		B

Notes

User approved ignoring U-Turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	59.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	4	5	2
Ped. Right-Left Flow Rate (p/h)	4	5	2
Ped. R. Sidewalk Flow Rate (p/h)	7	0	4
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	2894.6	5177.5	4534.0
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.1
Crosswalk Circulation Code	F	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.15	2.99	2.89
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	1	1	2
Total Flow Rate (veh/h)	286	1391	1079
Effct. Green for Bike (s)	9.6	73.1	51.6
Cross Street Width (ft)	60.0	59.2	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	202	1539	1086
Bicycle Delay (s/bike)	38.4	2.5	9.9
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.95	3.61	3.00
Bicycle LOS	C	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	137	94	256	173	85	119	732	282	29	529	93
Future Volume (veh/h)	117	137	94	256	173	85	119	732	282	29	529	93
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)	0.89		0.81	0.99		0.90	1.00		0.97	1.00		0.97
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	1776	1776	1900	1863	1863	1900	1827	1827	1900	1863	1863	1900
Adj Flow Rate, veh/h	127	149	102	278	188	92	129	796	307	32	575	101
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	7	7	7	2	2	2	4	4	4	2	2	2
Cap, veh/h	225	171	117	324	419	205	376	1136	437	206	1337	234
Arrive On Green	0.19	0.19	0.19	0.14	0.37	0.37	0.05	0.47	0.47	0.03	0.45	0.45
Sat Flow, veh/h	925	891	610	1774	1134	555	1740	2425	934	1774	2994	524
Grp Volume(v), veh/h	127	0	251	278	0	280	129	569	534	32	339	337
Grp Sat Flow(s),veh/h/ln	925	0	1500	1774	0	1689	1740	1736	1624	1774	1770	1749
Q Serve(g_s), s	19.3	0.0	24.4	18.3	0.0	18.8	6.0	38.9	39.1	1.4	19.7	19.8
Cycle Q Clear(g_c), s	19.3	0.0	24.4	18.3	0.0	18.8	6.0	38.9	39.1	1.4	19.7	19.8
Prop In Lane	1.00		0.41	1.00		0.33	1.00		0.58	1.00		0.30
Lane Grp Cap(c), veh/h	225	0	287	324	0	624	376	813	760	206	790	781
V/C Ratio(X)	0.56	0.00	0.87	0.86	0.00	0.45	0.34	0.70	0.70	0.16	0.43	0.43
Avail Cap(c_a), veh/h	256	0	337	363	0	719	416	813	760	285	790	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.8	0.0	58.9	41.4	0.0	35.7	21.8	31.6	31.6	25.5	28.4	28.4
Incr Delay (d2), s/veh	2.2	0.0	19.3	16.7	0.0	0.5	0.5	5.0	5.4	0.3	1.7	1.7
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 BackOfQ(50%),veh/ln	5.1	0.0	11.7	10.5	0.0	8.9	2.9	19.8	18.6	0.7	10.0	9.9
LnGrp Delay(d),s/veh	59.0	0.0	78.2	58.1	0.0	36.2	22.4	36.6	37.0	25.9	30.1	30.2
LnGrp LOS	E		E	E		D	C	D	D	C	C	C
Approach Vol, veh/h		378			558			1232			708	
Approach Delay, s/veh		71.7			47.1			35.2			30.0	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.3	76.9	26.7	35.0	14.6	73.7		61.8
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64
Max Q Clear Time (g_c+I1), s	3.4	41.1	20.3	26.4	8.0	21.8		20.8
Green Ext Time (p_c), s	0.0	9.2	0.3	2.4	0.1	14.8		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	48	40	6	9
Ped. Right-Left Flow Rate (p/h)	48	40	6	9
Ped. R. Sidewalk Flow Rate (p/h)	5	10	76	22
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	600.3	632.5	408.3	496.7
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.27	2.37	2.90	2.78
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	7	13	1	4
Total Flow Rate (veh/h)	378	558	1232	708
Effct. Green for Bike (s)	27.2	55.4	73.3	64.8
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	363	739	977	864
Bicycle Delay (s/bike)	50.4	30.0	19.6	24.2
Bicycle Compliance	Poor	Poor	Fair	Fair
Bicycle LOS Score	3.10	3.40	3.13	2.69
Bicycle LOS	C	C	C	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	1	2	2	1	7	5	1225	1	11	1595	6
Future Vol, veh/h	6	1	2	2	1	7	5	1225	1	11	1595	6
Conflicting Peds, #/hr	0	0	1	1	0	0	14	0	4	4	0	14
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	25	25	25	2	2	2	2	2	2
Mvmt Flow	6	1	2	2	1	7	5	1289	1	12	1679	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2375	3024	858	2169	3027	649	1699	0	0	1295	0	0
Stage 1	1719	1719	-	1305	1305	-	-	-	-	-	-	-
Stage 2	656	1305	-	864	1722	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	8	7	7.4	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	7	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.75	4.25	3.55	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	18	13	300	20	9	362	371	-	-	531	-	-
Stage 1	93	143	-	139	189	-	-	-	-	-	-	-
Stage 2	421	228	-	271	112	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	15	12	296	18	9	361	371	-	-	531	-	-
Mov Cap-2 Maneuver	15	12	-	18	9	-	-	-	-	-	-	-
Stage 1	91	138	-	137	186	-	-	-	-	-	-	-
Stage 2	405	224	-	261	108	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 340.8	120.8	0.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	371	-	-	18	41	531	-	-
HCM Lane V/C Ratio	0.014	-	-	0.526	0.257	0.022	-	-
HCM Control Delay (s)	14.8	-	-	$ 340.8	120.8	11.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0.8	0.1	-	-

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

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	54475800
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	2820
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.99
Delay for adq Gap	54475800.00
Avg Ped Delay (s)	54475800.00

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	54475800
Level of Service	F

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	2820
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.99
Delay for adq Gap	54475800.00
Avg Ped Delay (s)	54475800.00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1	75	79	5	32	28	1111	41	16	1383	32
Future Volume (veh/h)	42	1	75	79	5	32	28	1111	41	16	1383	32
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)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	1	76	80	5	32	28	1122	41	16	1397	32
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	106	21	147	183	19	55	282	2319	85	347	2318	53
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.03	0.67	0.67	0.02	0.66	0.66
Sat Flow, veh/h	436	146	1028	893	132	386	1774	3481	127	1774	3534	81
Grp Volume(v), veh/h	119	0	0	117	0	0	28	570	593	16	699	730
Grp Sat Flow(s),veh/h/ln	1610	0	0	1410	0	0	1774	1770	1839	1774	1770	1845
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	0.6	17.5	17.5	0.3	24.7	24.8
Cycle Q Clear(g_c), s	7.1	0.0	0.0	8.4	0.0	0.0	0.6	17.5	17.5	0.3	24.7	24.8
Prop In Lane	0.35		0.64	0.68		0.27	1.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	274	0	0	256	0	0	282	1179	1225	347	1161	1210
V/C Ratio(X)	0.43	0.00	0.00	0.46	0.00	0.00	0.10	0.48	0.48	0.05	0.60	0.60
Avail Cap(c_a), veh/h	572	0	0	535	0	0	355	1179	1225	438	1161	1210
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	0.0	43.9	0.0	0.0	8.5	9.0	9.0	7.0	10.8	10.8
Incr Delay (d2), s/veh	1.1	0.0	0.0	1.3	0.0	0.0	0.1	1.3	1.2	0.1	2.3	2.2
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 BackOfQ(50%),veh/ln	3.4	0.0	0.0	3.4	0.0	0.0	0.3	8.8	9.1	0.2	12.6	13.3
LnGrp Delay(d),s/veh	44.6	0.0	0.0	45.2	0.0	0.0	8.6	10.3	10.3	7.1	13.1	13.0
LnGrp LOS	D			D			A	B	B	A	B	B
Approach Vol, veh/h		119			117			1191			1445	
Approach Delay, s/veh		44.6			45.2			10.3			13.0	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.3	79.8		21.9	9.4	78.7		21.9
Change Period (Y+Rc), s	6.0	6.5		* 6.2	6.0	6.5		* 6.2
Max Green Setting (Gmax), s	8.0	45.5		* 38	8.0	45.5		* 38
Max Q Clear Time (g_c+I1), s	2.3	19.5		9.1	2.6	26.8		10.4
Green Ext Time (p_c), s	0.0	19.5		1.6	0.0	15.0		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	55.0	55.0	55.0	55.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.81	1.80	3.03	3.00
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	119	117	1191	1445
Effct. Green for Bike (s)	13.6	13.6	78.8	76.3
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	247	247	1433	1387
Bicycle Delay (s/bike)	42.2	42.2	4.4	5.2
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.67	2.67	2.91	3.12
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	9	75	42	10	1	57	1044	14	2	1492	153
Future Volume (veh/h)	138	9	75	42	10	1	57	1044	14	2	1492	153
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	142	9	77	43	10	1	59	1076	14	2	1538	153
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	10	86	210	45	4	215	2672	35	377	2177	214
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.03	0.75	0.75	0.67	0.67	0.67
Sat Flow, veh/h	945	60	512	996	269	24	1774	3576	47	515	3246	320
Grp Volume(v), veh/h	228	0	0	54	0	0	59	532	558	2	831	860
Grp Sat Flow(s),veh/h/ln	1517	0	0	1289	0	0	1774	1770	1853	515	1770	1796
Q Serve(g_s), s	16.6	0.0	0.0	0.0	0.0	0.0	1.5	16.3	16.3	0.2	43.7	45.4
Cycle Q Clear(g_c), s	21.9	0.0	0.0	5.3	0.0	0.0	1.5	16.3	16.3	5.0	43.7	45.4
Prop In Lane	0.62		0.34	0.80		0.02	1.00		0.03	1.00		0.18
Lane Grp Cap(c), veh/h	294	0	0	260	0	0	215	1322	1385	377	1187	1204
V/C Ratio(X)	0.78	0.00	0.00	0.21	0.00	0.00	0.27	0.40	0.40	0.01	0.70	0.71
Avail Cap(c_a), veh/h	397	0	0	360	0	0	292	1322	1385	377	1187	1204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	0.0	0.0	54.0	0.0	0.0	15.6	6.9	6.9	9.8	15.4	15.6
Incr Delay (d2), s/veh	6.6	0.0	0.0	0.4	0.0	0.0	0.7	0.9	0.9	0.0	3.5	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.0	0.0	2.0	0.0	0.0	1.0	8.2	8.5	0.0	22.4	23.7
LnGrp Delay(d),s/veh	67.3	0.0	0.0	54.4	0.0	0.0	16.3	7.8	7.7	9.9	18.8	19.3
LnGrp LOS	E			D			B	A	A	A	B	B
Approach Vol, veh/h		228			54			1149			1693	
Approach Delay, s/veh		67.3			54.4			8.2			19.0	
Approach LOS		E			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.5	107.1		31.4		118.6		31.4
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	11.6	83.5		* 36		* 1E2		* 36
Max Q Clear Time (g_c+I1), s	3.5	47.4		23.9		18.3		7.3
Green Ext Time (p_c), s	0.1	27.3		1.3		46.8		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	19.2
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	8	8
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	9112.5	9112.5
Right Corner Quality of Service	-	-	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.96	1.78	3.06	3.09
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	1	1	2	2
Total Flow Rate (veh/h)	228	54	1149	1693
Effct. Green for Bike (s)	27.7	28.0	109.7	98.4
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	369	373	1463	1312
Bicycle Delay (s/bike)	49.9	49.6	5.4	8.9
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.85	2.57	2.88	3.32
Bicycle LOS	C	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1	10	66	7	36	7	1178	27	34	1434	33
Future Volume (veh/h)	36	1	10	66	7	36	7	1178	27	34	1434	33
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)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
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	1759	1759	1900	1863	1863	1900	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	1	10	68	7	37	7	1214	28	35	1478	34
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	8	8	8	2	2	2	3	3	3	2	2	2
Cap, veh/h	157	12	117	190	22	116	291	2721	63	374	2748	63
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.78	0.78	0.78	0.78	0.78	0.78
Sat Flow, veh/h	1274	137	1369	1389	256	1356	341	3500	81	446	3534	81
Grp Volume(v), veh/h	37	0	11	68	0	44	7	608	634	35	739	773
Grp Sat Flow(s),veh/h/ln	1274	0	1506	1389	0	1612	341	1752	1828	446	1770	1846
Q Serve(g_s), s	2.5	0.0	0.6	4.3	0.0	2.3	0.7	10.6	10.6	2.6	14.4	14.4
Cycle Q Clear(g_c), s	4.8	0.0	0.6	4.9	0.0	2.3	15.1	10.6	10.6	13.3	14.4	14.4
Prop In Lane	1.00		0.91	1.00		0.84	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	157	0	129	190	0	138	291	1363	1421	374	1376	1435
V/C Ratio(X)	0.24	0.00	0.09	0.36	0.00	0.32	0.02	0.45	0.45	0.09	0.54	0.54
Avail Cap(c_a), veh/h	530	0	571	597	0	611	291	1363	1421	374	1376	1435
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	40.9	0.0	37.9	40.1	0.0	38.7	6.7	3.4	3.4	5.7	3.8	3.8
Incr Delay (d2), s/veh	0.8	0.0	0.3	1.1	0.0	1.3	0.2	1.1	1.0	0.4	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	1.7	0.0	1.1	0.1	5.5	5.7	0.4	7.2	7.5
LnGrp Delay(d),s/veh	41.7	0.0	38.2	41.3	0.0	40.0	6.9	4.5	4.4	6.1	5.0	5.0
LnGrp LOS	D		D	D		D	A	A	A	A	A	A
Approach Vol, veh/h		48			112			1249			1547	
Approach Delay, s/veh		40.9			40.8			4.5			5.0	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		76.4		13.6		76.4		13.6
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		43.6		34.1		43.6		34.1
Max Q Clear Time (g_c+I1), s		17.1		6.8		16.4		6.9
Green Ext Time (p_c), s		21.3		0.6		21.8		0.6

Intersection Summary			
HCM 2010 Ctrl Delay			6.7
HCM 2010 LOS			A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	1	1	5	3
Ped. Right-Left Flow Rate (p/h)	1	1	5	3
Ped. R. Sidewalk Flow Rate (p/h)	4	4	1	1
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	4535.2	6056.2	5581.7	8075.0
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.2	0.2	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.98	2.00	3.04	3.05
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	4	3
Total Flow Rate (veh/h)	48	112	1249	1547
Effct. Green for Bike (s)	9.6	9.9	71.5	71.5
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	213	220	1589	1589
Bicycle Delay (s/bike)	35.9	35.6	1.9	1.9
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.56	2.66	3.14	3.39
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	1418	232	226	748	277	228	576	278	400	867	223
Future Volume (veh/h)	210	1418	232	226	748	277	228	576	278	400	867	223
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	221	1493	244	238	787	292	240	606	293	421	913	235
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	260	1740	284	272	1446	531	276	876	383	466	1071	463
Arrive On Green	0.08	0.40	0.40	0.08	0.40	0.40	0.08	0.25	0.25	0.14	0.31	0.31
Sat Flow, veh/h	3442	4385	715	3408	3598	1322	3408	3505	1532	3408	3505	1515
Grp Volume(v), veh/h	221	1153	584	238	734	345	240	606	293	421	913	235
Grp Sat Flow(s),veh/h/ln	1721	1695	1710	1704	1679	1563	1704	1752	1532	1704	1752	1515
Q Serve(g_s), s	12.1	59.1	59.4	13.1	31.8	32.2	13.2	29.8	33.7	23.1	46.5	24.2
Cycle Q Clear(g_c), s	12.1	59.1	59.4	13.1	31.8	32.2	13.2	29.8	33.7	23.1	46.5	24.2
Prop In Lane	1.00		0.42	1.00		0.85	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	1345	679	272	1349	628	276	876	383	466	1071	463
V/C Ratio(X)	0.85	0.86	0.86	0.88	0.54	0.55	0.87	0.69	0.77	0.90	0.85	0.51
Avail Cap(c_a), veh/h	355	1345	679	276	1349	628	316	897	392	567	1155	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.41	0.41	0.41
Uniform Delay (d), s/veh	86.7	52.4	52.5	86.5	43.5	43.6	86.3	64.6	66.1	80.8	62.0	54.2
Incr Delay (d2), s/veh	13.2	7.2	13.4	25.2	1.6	3.4	20.0	2.2	8.6	7.5	2.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	29.1	30.6	7.1	15.1	14.5	7.0	14.7	15.2	11.4	23.0	10.2
LnGrp Delay(d),s/veh	100.0	59.6	65.9	111.7	45.1	47.1	106.3	66.8	74.6	88.3	64.5	54.6
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	E	D
Approach Vol, veh/h		1958			1317			1139			1569	
Approach Delay, s/veh		66.0			57.6			77.2			69.4	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	83.0	32.4	53.9	21.7	82.0	21.8	64.4
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	19.6	64.4	31.6	48.6	15.4	* 69	17.6	62.6
Max Q Clear Time (g_c+I1), s	14.1	34.2	25.1	35.7	15.1	61.4	15.2	48.5
Green Ext Time (p_c), s	0.3	23.8	0.8	8.9	0.0	6.7	0.2	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	13	6
Ped. Right-Left Flow Rate (p/h)	0	0	13	6
Ped. R. Sidewalk Flow Rate (p/h)	13	6	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	1829.6	4010.4	2744.5	6015.6
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	F	F
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.29	3.34	3.10	3.13
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	31	13	1	0
Total Flow Rate (veh/h)	1958	1317	1139	1569
Effct. Green for Bike (s)	73.6	73.2	46.0	57.3
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	775	771	484	603
Bicycle Delay (s/bike)	36.2	36.1	54.6	46.3
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.92	3.57	3.99	4.35
Bicycle LOS	D	D	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	178	1	10	1	1	1	14	957	1	4	1476	240
Future Volume (veh/h)	178	1	10	1	1	1	14	957	1	4	1476	240
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.95	0.99		0.94
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	1900	1863	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	191	1	11	1	1	1	15	1029	1	4	1587	258
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	307	1	13	193	174	273	138	2186	2	336	1800	284
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.61	0.61	0.00	0.40	0.40
Sat Flow, veh/h	1326	7	76	767	1005	1581	1757	3593	3	1774	3035	479
Grp Volume(v), veh/h	203	0	0	2	0	1	15	502	528	4	905	940
Grp Sat Flow(s),veh/h/ln	1410	0	0	1772	0	1581	1757	1752	1844	1774	1770	1745
Q Serve(g_s), s	12.5	0.0	0.0	0.0	0.0	0.0	0.3	14.1	14.1	0.1	42.2	45.7
Cycle Q Clear(g_c), s	12.5	0.0	0.0	0.1	0.0	0.0	0.3	14.1	14.1	0.1	42.2	45.7
Prop In Lane	0.94		0.05	0.50		1.00	1.00		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	321	0	0	366	0	273	138	1066	1122	336	1049	1034
V/C Ratio(X)	0.63	0.00	0.00	0.01	0.00	0.00	0.11	0.47	0.47	0.01	0.86	0.91
Avail Cap(c_a), veh/h	490	0	0	560	0	465	238	1066	1122	465	1049	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.63	0.63	0.63	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	0.0	30.8	0.0	30.8	19.1	9.7	9.7	8.2	23.8	24.8
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.0	0.0	0.0	0.2	0.9	0.9	0.0	9.3	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	0.0	0.0	0.0	0.2	7.1	7.5	0.0	23.3	25.7
LnGrp Delay(d),s/veh	38.1	0.0	0.0	30.8	0.0	30.8	19.4	10.6	10.6	8.2	33.1	38.0
LnGrp LOS	D			C		C	B	B	B	A	C	D
Approach Vol, veh/h		203			3			1045			1849	
Approach Delay, s/veh		38.1			30.8			10.7			35.5	
Approach LOS		D			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	59.9		21.3	7.5	61.3		21.3
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	7.0	* 38		* 27	7.1	37.5		* 26
Max Q Clear Time (g_c+I1), s	2.3	47.7		2.1	2.1	16.1		14.5
Green Ext Time (p_c), s	0.0	0.0		1.2	0.0	18.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	1	1	16	34
Ped. Right-Left Flow Rate (p/h)	1	1	16	34
Ped. R. Sidewalk Flow Rate (p/h)	28	22	1	1
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	1160.4	771.0	2055.5	999.0
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.2	0.2	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.92	1.95	3.00	3.11
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	1
Total Flow Rate (veh/h)	203	3	1045	1849
Effct. Green for Bike (s)	18.4	18.6	56.8	56.8
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	409	413	1262	1262
Bicycle Delay (s/bike)	28.5	28.3	6.1	6.1
Bicycle Compliance	Fair	Fair	Good	Good
Bicycle LOS Score	3.00	2.67	2.97	3.45
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	207	17	977	149	7	1434		
Future Volume (veh/h)	207	17	977	149	7	1434		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		0.97	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1845	1900	1845	1845		
Adj Flow Rate, veh/h	218	18	1028	157	7	1509		
Adj No. of Lanes	1	1	2	0	1	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	3	3	3	3		
Cap, veh/h	263	235	2178	332	414	2514		
Arrive On Green	0.15	0.15	1.00	1.00	0.72	0.72		
Sat Flow, veh/h	1774	1583	3128	463	466	3597		
Grp Volume(v), veh/h	218	18	593	592	7	1509		
Grp Sat Flow(s),veh/h/ln	1774	1583	1752	1747	466	1752		
Q Serve(g_s), s	10.7	0.9	0.0	0.0	0.4	19.2		
Cycle Q Clear(g_c), s	10.7	0.9	0.0	0.0	0.4	19.2		
Prop In Lane	1.00	1.00		0.27	1.00			
Lane Grp Cap(c), veh/h	263	235	1257	1253	414	2514		
V/C Ratio(X)	0.83	0.08	0.47	0.47	0.02	0.60		
Avail Cap(c_a), veh/h	597	533	1257	1253	414	2514		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	37.2	33.0	0.0	0.0	3.6	6.3		
Incr Delay (d2), s/veh	6.6	0.1	1.3	1.3	0.1	1.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.8	0.4	0.4	0.4	0.1	9.6		
LnGrp Delay(d),s/veh	43.9	33.2	1.3	1.3	3.7	7.4		
LnGrp LOS	D	C	A	A	A	A		
Approach Vol, veh/h	236		1185			1516		
Approach Delay, s/veh	43.0		1.3			7.4		
Approach LOS	D		A			A		
Timer	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		71.0				71.0		19.0
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		47.6				47.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				21.2		12.7
Green Ext Time (p_c), s		31.9				21.1		0.6
Intersection Summary								
HCM 2010 Ctrl Delay			7.8					
HCM 2010 LOS			A					

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	5	1	4
Ped. Right-Left Flow Rate (p/h)	5	1	4
Ped. R. Sidewalk Flow Rate (p/h)	5	5	5
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	3147.6	4268.4	4841.2
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.1	0.0
Crosswalk Circulation Code	F	F	F
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.06	3.09	2.98
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	35	1	2
Total Flow Rate (veh/h)	236	1185	1516
Effct. Green for Bike (s)	16.4	61.5	61.5
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	364	1367	1367
Bicycle Delay (s/bike)	30.6	4.5	4.5
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.87	3.11	3.73
Bicycle LOS	C	C	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	77	268	204	823	1150	66		
Future Volume (veh/h)	77	268	204	823	1150	66		
Number	7	14	1	6	2	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1845	1900		
Adj Flow Rate, veh/h	79	276	210	848	1186	68		
Adj No. of Lanes	1	1	1	2	2	0		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	2	2	3	3	3	3		
Cap, veh/h	356	318	321	2322	1733	99		
Arrive On Green	0.20	0.20	0.07	0.66	0.52	0.52		
Sat Flow, veh/h	1774	1583	1757	3597	3455	193		
Grp Volume(v), veh/h	79	276	210	848	617	637		
Grp Sat Flow(s),veh/h/ln	1774	1583	1757	1752	1752	1803		
Q Serve(g_s), s	3.4	15.2	4.7	9.7	23.7	23.8		
Cycle Q Clear(g_c), s	3.4	15.2	4.7	9.7	23.7	23.8		
Prop In Lane	1.00	1.00	1.00			0.11		
Lane Grp Cap(c), veh/h	356	318	321	2322	903	929		
V/C Ratio(X)	0.22	0.87	0.65	0.37	0.68	0.69		
Avail Cap(c_a), veh/h	556	496	336	2322	903	929		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.1	34.8	14.8	6.8	16.3	16.3		
Incr Delay (d2), s/veh	0.3	9.7	4.3	0.4	4.2	4.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.7	7.5	3.2	4.7	12.4	12.7		
LnGrp Delay(d),s/veh	30.4	44.5	19.1	7.2	20.5	20.4		
LnGrp LOS	C	D	B	A	C	C		
Approach Vol, veh/h	355			1058	1254			
Approach Delay, s/veh	41.4			9.6	20.5			
Approach LOS	D			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	13.2	52.9		23.9		66.1		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	7.5	35.5		* 28		49.5		
Max Q Clear Time (g_c+I1), s	6.7	25.8		17.2		11.7		
Green Ext Time (p_c), s	0.0	7.7		0.9		20.2		
Intersection Summary								
HCM 2010 Ctrl Delay			18.9					
HCM 2010 LOS			B					
Notes								

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	1	4	1
Ped. Right-Left Flow Rate (p/h)	1	4	1
Ped. R. Sidewalk Flow Rate (p/h)	1	5	5
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	6601.7	4841.2	8087.5
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.2	0.0	0.1
Crosswalk Circulation Code	F	F	F
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.16	2.97	2.85
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	6	0	2
Total Flow Rate (veh/h)	355	1058	1254
Effct. Green for Bike (s)	11.3	66.4	46.9
Cross Street Width (ft)	60.0	60.0	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	251	1476	1042
Bicycle Delay (s/bike)	34.5	3.1	10.3
Bicycle Compliance	Poor	Good	Fair
Bicycle LOS Score	3.06	3.35	3.14
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	128	154	312	144	69	93	616	172	20	721	68
Future Volume (veh/h)	113	128	154	312	144	69	93	616	172	20	721	68
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)	0.96		0.93	1.00		0.97	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1845	1845	1900	1827	1827	1900
Adj Flow Rate, veh/h	118	133	160	325	150	72	97	642	179	21	751	71
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	270	148	178	351	467	224	292	1203	335	267	1376	130
Arrive On Green	0.20	0.20	0.20	0.16	0.40	0.40	0.04	0.45	0.45	0.02	0.43	0.43
Sat Flow, veh/h	1110	740	890	1774	1179	566	1757	2686	748	1740	3202	303
Grp Volume(v), veh/h	118	0	293	325	0	222	97	418	403	21	407	415
Grp Sat Flow(s),veh/h/ln	1110	0	1630	1774	0	1745	1757	1752	1682	1740	1736	1769
Q Serve(g_s), s	14.3	0.0	26.3	21.2	0.0	13.2	4.6	26.0	26.1	1.0	26.2	26.2
Cycle Q Clear(g_c), s	14.3	0.0	26.3	21.2	0.0	13.2	4.6	26.0	26.1	1.0	26.2	26.2
Prop In Lane	1.00		0.55	1.00		0.32	1.00		0.44	1.00		0.17
Lane Grp Cap(c), veh/h	270	0	326	351	0	691	292	785	753	267	746	760
V/C Ratio(X)	0.44	0.00	0.90	0.93	0.00	0.32	0.33	0.53	0.53	0.08	0.55	0.55
Avail Cap(c_a), veh/h	297	0	366	358	0	743	350	785	753	355	746	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	0.0	58.5	39.8	0.0	31.3	24.7	30.1	30.1	24.6	31.8	31.9
Incr Delay (d2), s/veh	1.1	0.0	22.4	29.4	0.0	0.3	0.7	2.6	2.7	0.1	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	13.9	13.2	0.0	6.4	2.3	13.1	12.6	0.5	13.1	13.4
LnGrp Delay(d),s/veh	54.8	0.0	80.8	69.2	0.0	31.6	25.3	32.6	32.8	24.7	34.7	34.7
LnGrp LOS	D		F	E		C	C	C	C	C	C	C
Approach Vol, veh/h		411			547			918			843	
Approach Delay, s/veh		73.4			54.0			31.9			34.4	
Approach LOS		E			D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	73.9	29.4	36.3	13.1	71.2		65.7				
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3				
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64				
Max Q Clear Time (g_c+I1), s	3.0	28.1	23.2	28.3	6.6	28.2		15.2				
Green Ext Time (p_c), s	0.0	11.9	0.1	1.7	0.1	11.8		4.1				
Intersection Summary												
HCM 2010 Ctrl Delay			43.4									
HCM 2010 LOS			D									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	11	22	3	1
Ped. Right-Left Flow Rate (p/h)	11	22	3	1
Ped. R. Sidewalk Flow Rate (p/h)	0	4	21	12
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	2556.7	1414.9	993.8	1993.8
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.1
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.25	2.30	2.89	2.77
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	1	2	0	1
Total Flow Rate (veh/h)	411	547	918	843
Effct. Green for Bike (s)	28.1	57.7	71.4	63.5
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	375	769	952	847
Bicycle Delay (s/bike)	49.6	28.4	20.6	25.0
Bicycle Compliance	Poor	Fair	Fair	Fair
Bicycle LOS Score	3.16	3.38	2.87	2.81
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1	5	7	1	11	2	1836	9	11	1493	4
Future Vol, veh/h	4	1	5	7	1	11	2	1836	9	11	1493	4
Conflicting Peds, #/hr	4	0	0	0	0	4	4	0	14	14	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	5	7	1	12	2	1933	9	12	1572	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2576	3561	792	2765	3559	989	1580	0	0	1956	0	0
Stage 1	1601	1601	-	1956	1956	-	-	-	-	-	-	-
Stage 2	975	1960	-	809	1603	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	13	6	332	9	6	246	412	-	-	294	-	-
Stage 1	110	164	-	66	109	-	-	-	-	-	-	-
Stage 2	270	108	-	340	163	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	10	6	331	~ 7	6	242	412	-	-	293	-	-
Mov Cap-2 Maneuver	10	6	-	~ 7	6	-	-	-	-	-	-	-
Stage 1	109	157	-	65	107	-	-	-	-	-	-	-
Stage 2	252	106	-	319	156	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 388.7	$ 646.4	0	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	412	-	-	17	16	293	-	-
HCM Lane V/C Ratio	0.005	-	-	0.619	1.25	0.04	-	-
HCM Control Delay (s)	13.8	-	-	$ 388.7	$ 646.4	17.8	-	-
HCM Lane LOS	B	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	3	0.1	-	-

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

Approach	
Approach Direction	NB
Median Present?	No
Approach Delay(s)	
Level of Service	

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	3329
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.99
Delay for adq Gap	1099900032.00
Avg Ped Delay (s)	1099900032.00

Approach	
Approach Direction	SB
Median Present?	No
Approach Delay(s)	
Level of Service	

Crosswalk	
Length (ft)	68
Lanes Crossed	4
Veh Vol Crossed	3329
Ped Vol Crossed	0
Yield Rate(%)	0
Ped Platooning	No
Critical Headway (s)	22.43
Prob of Delayed X-ing	1.00
Prob of Blocked Lane	0.99
Delay for adq Gap	1099900032.00
Avg Ped Delay (s)	1099900032.00

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	4	37	97	9	33	54	1493	160	37	1205	62
Future Volume (veh/h)	31	4	37	97	9	33	54	1493	160	37	1205	62
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)	0.99		0.98	0.99		0.97	1.00		0.96	1.00		0.96
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	4	39	101	9	34	56	1555	167	39	1255	65
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	32	126	212	25	54	314	1983	210	212	2080	108
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.05	0.62	0.62	0.04	0.61	0.61
Sat Flow, veh/h	554	209	827	988	164	356	1774	3216	341	1774	3415	177
Grp Volume(v), veh/h	75	0	0	144	0	0	56	846	876	39	649	671
Grp Sat Flow(s),veh/h/ln	1590	0	0	1508	0	0	1774	1770	1787	1774	1770	1822
Q Serve(g_s), s	0.0	0.0	0.0	4.5	0.0	0.0	1.1	35.1	36.8	0.8	22.7	22.8
Cycle Q Clear(g_c), s	3.9	0.0	0.0	8.5	0.0	0.0	1.1	35.1	36.8	0.8	22.7	22.8
Prop In Lane	0.43		0.52	0.70		0.24	1.00		0.19	1.00		0.10
Lane Grp Cap(c), veh/h	294	0	0	291	0	0	314	1091	1102	212	1078	1110
V/C Ratio(X)	0.25	0.00	0.00	0.49	0.00	0.00	0.18	0.78	0.79	0.18	0.60	0.60
Avail Cap(c_a), veh/h	580	0	0	567	0	0	347	1091	1102	259	1078	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	0.0	39.3	0.0	0.0	9.1	14.1	14.4	13.9	12.1	12.1
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.3	0.0	0.0	0.2	4.1	4.5	0.4	2.5	2.4
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 BackOfQ(50%),veh/ln	1.9	0.0	0.0	3.8	0.0	0.0	0.6	18.2	19.4	0.5	11.8	12.1
LnGrp Delay(d),s/veh	38.0	0.0	0.0	40.6	0.0	0.0	9.3	18.1	18.9	14.3	14.6	14.5
LnGrp LOS	D			D			A	B	B	B	B	B
Approach Vol, veh/h		75			144			1778			1359	
Approach Delay, s/veh		38.0			40.6			18.2			14.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.4	68.2		21.5	11.1	67.4		21.5
Change Period (Y+Rc), s	6.4	6.5		* 6.2	6.4	6.5		* 6.2
Max Green Setting (Gmax), s	6.6	39.5		* 35	6.6	39.5		* 35
Max Q Clear Time (g_c+I1), s	2.8	38.8		5.9	3.1	24.8		10.5
Green Ext Time (p_c), s	0.0	0.6		1.4	0.0	13.4		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	50.0	50.0	50.0	50.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.81	1.87	3.14	3.09
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	75	144	1778	1359
Effct. Green for Bike (s)	15.0	15.0	64.5	61.8
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	300	300	1290	1236
Bicycle Delay (s/bike)	36.1	36.1	6.3	7.3
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.60	2.72	3.39	3.05
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	33	71	64	25	5	117	1610	59	4	1292	205
Future Volume (veh/h)	181	33	71	64	25	5	117	1610	59	4	1292	205
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	191	35	75	67	26	5	123	1695	62	4	1360	205
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	39	83	242	89	16	213	2399	87	154	1867	278
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.04	0.69	0.69	0.61	0.61	0.61
Sat Flow, veh/h	931	171	366	892	394	69	1774	3479	127	272	3077	459
Grp Volume(v), veh/h	301	0	0	98	0	0	123	858	899	4	776	789
Grp Sat Flow(s),veh/h/ln	1467	0	0	1355	0	0	1774	1770	1836	272	1770	1766
Q Serve(g_s), s	21.1	0.0	0.0	0.0	0.0	0.0	3.8	43.9	44.7	1.4	46.0	47.7
Cycle Q Clear(g_c), s	29.9	0.0	0.0	8.8	0.0	0.0	3.8	43.9	44.7	33.7	46.0	47.7
Prop In Lane	0.63		0.25	0.68		0.05	1.00		0.07	1.00		0.26
Lane Grp Cap(c), veh/h	371	0	0	347	0	0	213	1220	1266	154	1074	1072
V/C Ratio(X)	0.81	0.00	0.00	0.28	0.00	0.00	0.58	0.70	0.71	0.03	0.72	0.74
Avail Cap(c_a), veh/h	467	0	0	442	0	0	363	1220	1266	154	1074	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.4	0.0	0.0	48.2	0.0	0.0	22.5	14.1	14.2	28.2	20.6	21.0
Incr Delay (d2), s/veh	8.4	0.0	0.0	0.4	0.0	0.0	2.4	3.4	3.4	0.3	4.2	4.5
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 BackOfQ(50%),veh/ln	13.0	0.0	0.0	3.4	0.0	0.0	2.8	22.4	23.7	0.1	23.7	24.4
LnGrp Delay(d),s/veh	64.9	0.0	0.0	48.7	0.0	0.0	24.9	17.5	17.6	28.5	24.9	25.5
LnGrp LOS	E			D			C	B	B	C	C	C
Approach Vol, veh/h		301			98			1880			1569	
Approach Delay, s/veh		64.9			48.7			18.0			25.2	
Approach LOS		E			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.4	97.5		40.1		109.9		40.1
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	18.6	68.5		* 44		* 94		* 44
Max Q Clear Time (g_c+I1), s	5.8	49.7		31.9		46.7		10.8
Green Ext Time (p_c), s	0.2	17.5		1.9		39.7		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	4	3	4	69
Ped. Right-Left Flow Rate (p/h)	4	3	4	6
Ped. R. Sidewalk Flow Rate (p/h)	5	6	1	2
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	3435.7	760.3	4816.2	846.6
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.06	1.83	3.21	3.23
Pedestrian Crosswalk LOS	B	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	1	3
Total Flow Rate (veh/h)	301	98	1880	1569
Effct. Green for Bike (s)	36.7	37.0	100.7	83.1
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	489	493	1343	1108
Bicycle Delay (s/bike)	42.8	42.6	8.1	14.9
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	2.97	2.64	3.48	3.22
Bicycle LOS	C	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	17	7	86	23	55	25	1566	82	47	1177	55
Future Volume (veh/h)	46	17	7	86	23	55	25	1566	82	47	1177	55
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)	0.99		0.99	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1845	1845	1900
Adj Flow Rate, veh/h	49	18	7	91	24	59	27	1666	87	50	1252	59
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	179	161	63	231	59	146	324	2542	132	210	2531	119
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1296	1272	495	1362	469	1152	417	3417	177	270	3402	160
Grp Volume(v), veh/h	49	0	25	91	0	83	27	857	896	50	644	667
Grp Sat Flow(s),veh/h/ln	1296	0	1767	1362	0	1621	417	1770	1825	270	1752	1810
Q Serve(g_s), s	3.4	0.0	1.2	6.0	0.0	4.5	2.7	22.9	23.5	10.8	14.1	14.2
Cycle Q Clear(g_c), s	7.9	0.0	1.2	7.2	0.0	4.5	16.9	22.9	23.5	34.3	14.1	14.2
Prop In Lane	1.00		0.28	1.00		0.71	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	179	0	224	231	0	205	324	1316	1357	210	1304	1347
V/C Ratio(X)	0.27	0.00	0.11	0.39	0.00	0.40	0.08	0.65	0.66	0.24	0.49	0.50
Avail Cap(c_a), veh/h	480	0	634	548	0	582	324	1316	1357	210	1304	1347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	41.8	0.0	36.8	39.9	0.0	38.2	8.3	6.0	6.1	14.7	4.9	4.9
Incr Delay (d2), s/veh	0.8	0.0	0.2	1.1	0.0	1.3	0.5	2.5	2.5	2.0	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.6	2.3	0.0	2.1	0.4	11.9	12.4	0.9	7.2	7.4
LnGrp Delay(d),s/veh	42.7	0.0	37.0	41.0	0.0	39.5	8.9	8.6	8.6	16.8	5.9	5.9
LnGrp LOS	D		D	D		D	A	A	A	B	A	A
Approach Vol, veh/h		74			174			1780			1361	
Approach Delay, s/veh		40.7			40.3			8.6			6.3	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		77.1		17.9		77.1		17.9
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		48.6		34.1		48.6		34.1
Max Q Clear Time (g_c+I1), s		25.5		9.9		36.3		9.2
Green Ext Time (p_c), s		20.8		1.1		11.5		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	3	5	5	13
Ped. Right-Left Flow Rate (p/h)	3	5	5	13
Ped. R. Sidewalk Flow Rate (p/h)	11	7	2	6
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	2682.4	1670.5	3286.6	1893.4
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.1	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.00	2.04	3.13	3.13
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	74	174	1780	1361
Effct. Green for Bike (s)	11.6	11.7	74.8	74.8
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	244	246	1575	1575
Bicycle Delay (s/bike)	36.6	36.5	2.1	2.1
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.60	2.76	3.58	3.23
Bicycle LOS	B	C	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	293	738	226	300	1601	540	331	927	244	337	780	262
Future Volume (veh/h)	293	738	226	300	1601	540	331	927	244	337	780	262
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.91	1.00		0.91	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	305	769	235	312	1668	562	345	966	254	351	812	273
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	1594	479	351	1641	526	354	895	363	320	860	352
Arrive On Green	0.08	0.42	0.42	0.10	0.44	0.44	0.10	0.25	0.25	0.09	0.24	0.24
Sat Flow, veh/h	3442	3779	1136	3442	3712	1191	3442	3539	1433	3442	3539	1450
Grp Volume(v), veh/h	305	689	315	312	1516	714	345	966	254	351	812	273
Grp Sat Flow(s),veh/h/ln	1721	1695	1525	1721	1695	1513	1721	1770	1433	1721	1770	1450
Q Serve(g_s), s	16.6	29.5	30.1	17.9	88.4	88.4	20.0	50.6	32.2	18.6	45.1	35.1
Cycle Q Clear(g_c), s	16.6	29.5	30.1	17.9	88.4	88.4	20.0	50.6	32.2	18.6	45.1	35.1
Prop In Lane	1.00		0.75	1.00		0.79	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	286	1430	643	351	1498	669	354	895	363	320	860	352
V/C Ratio(X)	1.07	0.48	0.49	0.89	1.01	1.07	0.97	1.08	0.70	1.10	0.94	0.77
Avail Cap(c_a), veh/h	286	1430	643	437	1498	669	354	895	363	320	860	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72
Uniform Delay (d), s/veh	91.7	41.9	42.1	88.7	55.8	55.8	89.4	74.7	67.8	90.7	74.4	70.6
Incr Delay (d2), s/veh	72.3	1.2	2.7	16.8	26.2	54.3	40.5	53.7	5.9	71.3	14.6	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	14.0	13.2	9.4	46.9	47.0	11.5	31.4	13.3	12.0	23.9	14.8
LnGrp Delay(d),s/veh	164.0	43.1	44.8	105.4	82.0	110.1	130.0	128.4	73.7	162.0	89.0	78.2
LnGrp LOS	F	D	D	F	F	F	F	F	E	F	F	E
Approach Vol, veh/h		1309			2542			1565			1436	
Approach Delay, s/veh		71.7			92.8			119.8			104.8	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	95.0	25.0	57.0	27.0	91.0	27.0	55.0
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	16.6	88.4	18.6	50.6	25.4	* 80	20.6	48.6
Max Q Clear Time (g_c+I1), s	18.6	90.4	20.6	52.6	19.9	32.1	22.0	47.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.5	39.3	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	97.4
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	37	42	35	32
Ped. Right-Left Flow Rate (p/h)	37	42	35	32
Ped. R. Sidewalk Flow Rate (p/h)	52	15	19	60
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	326.0	390.5	365.8	324.6
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	100.0	100.0	100.0	100.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.35	3.40	3.18	3.24
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	8	6	0	1
Total Flow Rate (veh/h)	1309	2542	1565	1436
Effct. Green for Bike (s)	82.3	88.4	50.6	48.6
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	823	884	506	486
Bicycle Delay (s/bike)	34.8	31.2	55.8	57.3
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.57	4.24	4.34	4.24
Bicycle LOS	D	D	E	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1	20	1	1	1	20	1512	1	1	1399	156
Future Volume (veh/h)	182	1	20	1	1	1	20	1512	1	1	1399	156
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.97	0.99		0.93	1.00		0.93
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	1900	1845	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	186	1	20	1	1	1	20	1543	1	1	1428	159
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	3	3	3	2	2	2
Cap, veh/h	237	1	22	161	152	249	300	2644	2	220	2283	251
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.02	0.74	0.74	0.00	1.00	1.00
Sat Flow, veh/h	1243	7	134	816	938	1539	1757	3594	2	1774	3187	351
Grp Volume(v), veh/h	207	0	0	2	0	1	20	752	792	1	786	801
Grp Sat Flow(s),veh/h/ln	1384	0	0	1754	0	1539	1757	1752	1844	1774	1770	1768
Q Serve(g_s), s	27.9	0.0	0.0	0.0	0.0	0.1	0.6	37.8	37.8	0.0	0.0	0.0
Cycle Q Clear(g_c), s	28.0	0.0	0.0	0.2	0.0	0.1	0.6	37.8	37.8	0.0	0.0	0.0
Prop In Lane	0.90		0.10	0.50		1.00	1.00		0.00	1.00		0.20
Lane Grp Cap(c), veh/h	260	0	0	313	0	249	300	1289	1357	220	1268	1266
V/C Ratio(X)	0.80	0.00	0.00	0.01	0.00	0.00	0.07	0.58	0.58	0.00	0.62	0.63
Avail Cap(c_a), veh/h	323	0	0	386	0	320	384	1289	1357	340	1268	1266
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	78.5	0.0	0.0	66.8	0.0	66.7	6.7	11.6	11.6	10.6	0.0	0.0
Incr Delay (d2), s/veh	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0	2.3	2.4
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 BackOfQ(50%),veh/ln	11.5	0.0	0.0	0.1	0.0	0.0	0.3	18.2	19.2	0.0	0.8	0.8
LnGrp Delay(d),s/veh	89.1	0.0	0.0	66.8	0.0	66.8	6.7	11.8	11.8	10.6	2.3	2.4
LnGrp LOS	F			E		E	A	B	B	B	A	A
Approach Vol, veh/h		207			3			1564			1588	
Approach Delay, s/veh		89.1			66.8			11.7			2.4	
Approach LOS		F			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	142.6		36.5	7.2	146.3		36.5
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	13.0	* 1.2E2		* 40	13.1	118.5		* 39
Max Q Clear Time (g_c+I1), s	2.6	2.0		2.2	2.0	39.8		30.0
Green Ext Time (p_c), s	0.0	69.6		1.4	0.0	54.7		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	43	31
Ped. Right-Left Flow Rate (p/h)	0	0	43	31
Ped. R. Sidewalk Flow Rate (p/h)	32	42	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	574.5	665.6	788.3	1116.4
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	F	F
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.91	1.98	3.12	3.20
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	1	15	9
Total Flow Rate (veh/h)	207	3	1564	1588
Effct. Green for Bike (s)	33.2	33.4	142.0	136.6
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	349	352	1495	1438
Bicycle Delay (s/bike)	64.7	64.6	6.1	7.5
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	3.00	2.67	3.40	3.24
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	15	1656	182	6	1288
Future Volume (veh/h)	146	15	1656	182	6	1288
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.96	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1900	1863	1863
Adj Flow Rate, veh/h	152	16	1725	190	6	1342
Adj No. of Lanes	1	1	2	0	1	2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	2	2
Cap, veh/h	192	171	2407	259	254	2706
Arrive On Green	0.11	0.11	1.00	1.00	0.76	0.76
Sat Flow, veh/h	1774	1583	3239	339	233	3632
Grp Volume(v), veh/h	152	16	934	981	6	1342
Grp Sat Flow(s),veh/h/ln	1774	1583	1736	1752	233	1770
Q Serve(g_s), s	7.9	0.9	0.0	0.0	0.6	13.7
Cycle Q Clear(g_c), s	7.9	0.9	0.0	0.0	0.6	13.7
Prop In Lane	1.00	1.00		0.19	1.00	
Lane Grp Cap(c), veh/h	192	171	1327	1339	254	2706
V/C Ratio(X)	0.79	0.09	0.70	0.73	0.02	0.50
Avail Cap(c_a), veh/h	566	505	1327	1339	254	2706
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	38.2	0.0	0.0	2.7	4.2
Incr Delay (d2), s/veh	7.2	0.2	3.2	3.6	0.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.4	1.2	1.3	0.0	6.8
LnGrp Delay(d),s/veh	48.6	38.4	3.2	3.6	2.9	4.9
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	168		1915			1348
Approach Delay, s/veh	47.6		3.4			4.9
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		79.0				79.0		16.0
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		52.6				52.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				15.7		9.9
Green Ext Time (p_c), s		42.7				32.5		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		6.1
HCM 2010 LOS		A

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	6	9
Ped. Right-Left Flow Rate (p/h)	0	6	9
Ped. R. Sidewalk Flow Rate (p/h)	32	11	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	1447.3	3154.1	2400.3
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.05	3.25	3.12
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	1	3	3
Total Flow Rate (veh/h)	168	1915	1348
Effct. Green for Bike (s)	13.5	69.4	69.4
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	284	1461	1461
Bicycle Delay (s/bike)	35.0	3.5	3.5
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.76	3.71	3.59
Bicycle LOS	C	D	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	90	235	284	1285	1129	76		
Future Volume (veh/h)	90	235	284	1285	1129	76		
Number	7	14	1	6	2	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1827	1827	1863	1900		
Adj Flow Rate, veh/h	95	247	299	1353	1188	80		
Adj No. of Lanes	1	1	1	2	2	0		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	2	2	4	4	2	2		
Cap, veh/h	322	288	357	2391	1755	118		
Arrive On Green	0.18	0.18	0.10	0.69	0.52	0.52		
Sat Flow, veh/h	1774	1583	1740	3563	3451	226		
Grp Volume(v), veh/h	95	247	299	1353	625	643		
Grp Sat Flow(s),veh/h/ln	1774	1583	1740	1736	1770	1814		
Q Serve(g_s), s	4.4	14.4	7.1	18.9	24.8	24.9		
Cycle Q Clear(g_c), s	4.4	14.4	7.1	18.9	24.8	24.9		
Prop In Lane	1.00	1.00	1.00			0.12		
Lane Grp Cap(c), veh/h	322	288	357	2391	925	948		
V/C Ratio(X)	0.29	0.86	0.84	0.57	0.68	0.68		
Avail Cap(c_a), veh/h	527	470	398	2391	925	948		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	33.6	37.7	16.8	7.5	16.7	16.8		
Incr Delay (d2), s/veh	0.5	8.6	13.4	1.0	4.0	3.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.2	6.9	5.6	9.2	13.0	13.3		
LnGrp Delay(d),s/veh	34.1	46.3	30.2	8.5	20.7	20.6		
LnGrp LOS	C	D	C	A	C	C		
Approach Vol, veh/h	342			1652	1268			
Approach Delay, s/veh	42.9			12.4	20.7			
Approach LOS	D			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.8	56.2		23.1		71.9		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	11.5	36.5		* 28		54.5		
Max Q Clear Time (g_c+I1), s	9.1	26.9		16.4		20.9		
Green Ext Time (p_c), s	0.2	8.6		0.9		24.6		

Intersection Summary		
HCM 2010 Ctrl Delay		18.8
HCM 2010 LOS		B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	4	5	2
Ped. Right-Left Flow Rate (p/h)	4	5	2
Ped. R. Sidewalk Flow Rate (p/h)	7	0	4
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	2894.6	5177.5	4534.0
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.1
Crosswalk Circulation Code	F	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.19	3.11	3.03
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	1	1	2
Total Flow Rate (veh/h)	342	1652	1268
Effct. Green for Bike (s)	10.5	72.2	45.4
Cross Street Width (ft)	60.0	60.0	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	221	1520	956
Bicycle Delay (s/bike)	37.6	2.7	13.0
Bicycle Compliance	Poor	Good	Fair
Bicycle LOS Score	3.04	3.84	3.16
Bicycle LOS	C	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	164	112	306	207	102	125	875	337	34	632	111
Future Volume (veh/h)	140	164	112	306	207	102	125	875	337	34	632	111
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)	0.91		0.83	1.00		0.91	1.00		0.96	1.00		0.96
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	1776	1776	1900	1863	1863	1900	1827	1827	1900	1863	1863	1900
Adj Flow Rate, veh/h	152	178	122	333	225	111	136	951	366	37	687	121
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	7	7	7	2	2	2	4	4	4	2	2	2
Cap, veh/h	241	194	133	352	470	232	294	1026	391	122	1184	208
Arrive On Green	0.22	0.22	0.22	0.16	0.41	0.41	0.06	0.42	0.42	0.03	0.40	0.40
Sat Flow, veh/h	899	900	617	1774	1135	560	1740	2432	927	1774	2991	526
Grp Volume(v), veh/h	152	0	300	333	0	336	136	676	641	37	406	402
Grp Sat Flow(s),veh/h/ln	899	0	1518	1774	0	1695	1740	1736	1624	1774	1770	1747
Q Serve(g_s), s	24.0	0.0	29.0	21.7	0.0	21.7	6.9	55.3	56.6	1.8	27.0	27.1
Cycle Q Clear(g_c), s	24.0	0.0	29.0	21.7	0.0	21.7	6.9	55.3	56.6	1.8	27.0	27.1
Prop In Lane	1.00		0.41	1.00		0.33	1.00		0.57	1.00		0.30
Lane Grp Cap(c), veh/h	241	0	327	352	0	702	294	732	685	122	701	692
V/C Ratio(X)	0.63	0.00	0.92	0.94	0.00	0.48	0.46	0.92	0.94	0.30	0.58	0.58
Avail Cap(c_a), veh/h	250	0	341	354	0	722	323	732	685	198	701	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	0.0	57.6	40.1	0.0	32.1	27.2	41.1	41.5	35.3	35.5	35.5
Incr Delay (d2), s/veh	4.8	0.0	28.4	33.7	0.0	0.5	1.1	19.1	21.9	1.4	3.5	3.5
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 BackOfQ(50%),veh/ln	6.3	0.0	14.7	16.9	0.0	10.3	3.4	30.4	29.5	0.9	13.9	13.7
LnGrp Delay(d),s/veh	60.3	0.0	86.0	73.7	0.0	32.6	28.3	60.2	63.4	36.7	39.0	39.1
LnGrp LOS	E		F	E		C	C	E	E	D	D	D
Approach Vol, veh/h		452			669			1453			845	
Approach Delay, s/veh		77.4			53.1			58.6			38.9	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.6	69.9	29.9	38.6	15.5	66.1		68.4
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64
Max Q Clear Time (g_c+I1), s	3.8	58.6	23.7	31.0	8.9	29.1		23.7
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.1	16.4		5.8

Intersection Summary	
HCM 2010 Ctrl Delay	55.1
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	48	40	6	9
Ped. Right-Left Flow Rate (p/h)	48	40	6	9
Ped. R. Sidewalk Flow Rate (p/h)	5	10	76	22
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	600.3	632.5	408.3	496.7
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.32	2.44	3.00	2.87
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	7	13	1	4
Total Flow Rate (veh/h)	452	669	1453	845
Effct. Green for Bike (s)	30.8	60.5	65.4	59.7
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	411	807	872	796
Bicycle Delay (s/bike)	47.5	26.9	23.9	27.2
Bicycle Compliance	Poor	Fair	Fair	Fair
Bicycle LOS Score	3.22	3.58	3.31	2.81
Bicycle LOS	C	D	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6

Intersection Summary		
HCM 2010 Ctrl Delay		59.2
HCM 2010 LOS		E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	2	2	1	7	6	1231	1	52	1603	6
Future Volume (veh/h)	6	1	2	2	1	7	6	1231	1	52	1603	6
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)	0.99		1.00	0.99		1.00	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1520	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	1	2	2	1	7	6	1296	1	55	1687	6
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	25	25	25	2	2	2	2	2	2
Cap, veh/h	128	5	9	79	4	25	284	2792	2	391	2783	10
Arrive On Green	0.03	0.03	0.03	0.03	0.03	0.03	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1033	172	344	263	131	920	289	3629	3	423	3617	13
Grp Volume(v), veh/h	9	0	0	10	0	0	6	632	665	55	825	868
Grp Sat Flow(s),veh/h/ln	1549	0	0	1314	0	0	289	1770	1862	423	1770	1860
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.0	0.0	0.5	7.7	7.7	3.2	12.1	12.1
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.4	0.0	0.0	12.7	7.7	7.7	10.9	12.1	12.1
Prop In Lane	0.67		0.22	0.20		0.70	1.00		0.00	1.00		0.01
Lane Grp Cap(c), veh/h	142	0	0	108	0	0	284	1361	1433	391	1361	1431
V/C Ratio(X)	0.06	0.00	0.00	0.09	0.00	0.00	0.02	0.46	0.46	0.14	0.61	0.61
Avail Cap(c_a), veh/h	543	0	0	455	0	0	284	1361	1433	391	1361	1431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	0.0	28.6	0.0	0.0	5.7	2.5	2.5	4.4	3.0	3.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0	0.1	1.1	1.1	0.8	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.2	0.0	0.0	0.1	4.1	4.3	0.4	6.5	6.8
LnGrp Delay(d),s/veh	28.7	0.0	0.0	28.9	0.0	0.0	5.9	3.6	3.6	5.2	5.0	4.9
LnGrp LOS	C			C			A	A	A	A	A	A
Approach Vol, veh/h		9			10			1303			1748	
Approach Delay, s/veh		28.7			28.9			3.6			5.0	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		52.3		7.7		52.3		7.7
Change Period (Y+Rc), s		* 6.1		* 6.1		* 6.1		* 6.1
Max Green Setting (Gmax), s		* 30		* 18		* 30		* 18
Max Q Clear Time (g_c+I1), s		14.7		2.3		14.1		2.4
Green Ext Time (p_c), s		13.8		0.0		14.3		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			4.5
HCM 2010 LOS			A

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.3	60.1	60.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	30.0	30.0	30.0	30.0
Pedestrian Compliance Code	Fair	Fair	Fair	Fair
Pedestrian Crosswalk Score	1.72	1.74	3.07	3.09
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	9	10	1303	1748
Effct. Green for Bike (s)	5.9	5.9	56.2	56.2
Cross Street Width (ft)	60.1	60.2	24.3	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	197	197	1873	1873
Bicycle Delay (s/bike)	24.4	24.4	0.1	0.1
Bicycle Compliance	Fair	Fair	Good	Good
Bicycle LOS Score	2.49	2.50	3.01	3.37
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1	76	79	5	32	31	1116	41	17	1390	32
Future Volume (veh/h)	42	1	76	79	5	32	31	1116	41	17	1390	32
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		0.99	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	1	77	80	5	32	31	1127	41	17	1404	32
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	21	152	187	19	57	282	2265	82	342	2253	51
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.04	0.65	0.65	0.03	0.64	0.64
Sat Flow, veh/h	433	142	1031	894	129	385	1774	3482	127	1774	3534	80
Grp Volume(v), veh/h	120	0	0	117	0	0	31	573	595	17	702	734
Grp Sat Flow(s),veh/h/ln	1607	0	0	1408	0	0	1774	1770	1839	1774	1770	1845
Q Serve(g_s), s	0.0	0.0	0.0	1.3	0.0	0.0	0.6	18.4	18.4	0.4	26.2	26.3
Cycle Q Clear(g_c), s	7.1	0.0	0.0	8.4	0.0	0.0	0.6	18.4	18.4	0.4	26.2	26.3
Prop In Lane	0.35		0.64	0.68		0.27	1.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	281	0	0	262	0	0	282	1151	1196	342	1128	1176
V/C Ratio(X)	0.43	0.00	0.00	0.45	0.00	0.00	0.11	0.50	0.50	0.05	0.62	0.62
Avail Cap(c_a), veh/h	581	0	0	542	0	0	432	1151	1196	516	1128	1176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	0.0	0.0	43.5	0.0	0.0	9.3	9.9	9.9	7.7	12.0	12.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.2	0.0	0.0	0.2	1.4	1.3	0.1	2.6	2.5
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 BackOfQ(50%),veh/ln	3.4	0.0	0.0	3.4	0.0	0.0	0.3	9.3	9.7	0.2	13.5	14.1
LnGrp Delay(d),s/veh	44.1	0.0	0.0	44.6	0.0	0.0	9.5	11.3	11.3	7.7	14.6	14.5
LnGrp LOS	D			D			A	B	B	A	B	B
Approach Vol, veh/h		120			117			1199			1453	
Approach Delay, s/veh		44.1			44.6			11.2			14.5	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	76.5		22.8	9.2	78.0		22.8
Change Period (Y+Rc), s	6.4	6.4		6.6	6.4	6.4		6.6
Max Green Setting (Gmax), s	13.6	38.6		38.4	13.6	38.6		38.4
Max Q Clear Time (g_c+I1), s	2.6	28.3		9.1	2.4	20.4		10.4
Green Ext Time (p_c), s	0.0	8.9		1.6	0.0	14.7		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	55.0	55.0	55.0	55.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.81	1.80	3.04	3.01
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	120	117	1199	1453
Effct. Green for Bike (s)	14.3	14.3	77.3	74.6
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	260	260	1405	1356
Bicycle Delay (s/bike)	41.6	41.6	4.9	5.7
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.68	2.67	2.92	3.13
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	8	76	42	10	1	74	1049	13	4	1499	154
Future Volume (veh/h)	138	8	76	42	10	1	74	1049	13	4	1499	154
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	142	8	78	43	10	1	76	1081	13	4	1545	154
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	9	87	211	45	4	215	2675	32	375	2171	214
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.04	0.75	0.75	0.67	0.67	0.67
Sat Flow, veh/h	944	53	519	996	269	24	1774	3580	43	513	3246	320
Grp Volume(v), veh/h	228	0	0	54	0	0	76	534	560	4	835	864
Grp Sat Flow(s),veh/h/ln	1516	0	0	1289	0	0	1774	1770	1854	513	1770	1796
Q Serve(g_s), s	16.6	0.0	0.0	0.0	0.0	0.0	1.9	16.4	16.4	0.4	44.3	46.1
Cycle Q Clear(g_c), s	21.9	0.0	0.0	5.3	0.0	0.0	1.9	16.4	16.4	5.1	44.3	46.1
Prop In Lane	0.62		0.34	0.80		0.02	1.00		0.02	1.00		0.18
Lane Grp Cap(c), veh/h	294	0	0	260	0	0	215	1322	1385	375	1184	1201
V/C Ratio(X)	0.78	0.00	0.00	0.21	0.00	0.00	0.35	0.40	0.40	0.01	0.71	0.72
Avail Cap(c_a), veh/h	397	0	0	360	0	0	289	1322	1385	375	1184	1201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	0.0	0.0	54.0	0.0	0.0	16.7	6.9	6.9	9.9	15.6	15.9
Incr Delay (d2), s/veh	6.6	0.0	0.0	0.4	0.0	0.0	1.0	0.9	0.9	0.1	3.5	3.7
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 BackOfQ(50%),veh/ln	9.8	0.0	0.0	2.0	0.0	0.0	1.4	8.4	8.7	0.1	22.7	23.8
LnGrp Delay(d),s/veh	67.3	0.0	0.0	54.4	0.0	0.0	17.7	7.8	7.7	10.0	19.1	19.6
LnGrp LOS	E			D			B	A	A	A	B	B
Approach Vol, veh/h		228			54			1170			1703	
Approach Delay, s/veh		67.3			54.4			8.4			19.3	
Approach LOS		E			D			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6		8				
Phs Duration (G+Y+Rc), s	11.8	106.8		31.4		118.6		31.4				
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2				
Max Green Setting (Gmax), s	11.6	83.5		* 36		* 1E2		* 36				
Max Q Clear Time (g_c+I1), s	3.9	48.1		23.9		18.4		7.3				
Green Ext Time (p_c), s	0.1	27.0		1.3		47.3		1.8				
Intersection Summary												
HCM 2010 Ctrl Delay			19.4									
HCM 2010 LOS			B									
Notes												

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.97	1.78	3.07	3.09
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	228	54	1170	1703
Effct. Green for Bike (s)	27.7	28.0	109.7	95.2
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	369	373	1463	1269
Bicycle Delay (s/bike)	49.9	49.6	5.4	10.0
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	2.85	2.57	2.89	3.33
Bicycle LOS	C	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1	10	67	7	36	26	1184	28	38	1441	34
Future Volume (veh/h)	36	1	10	67	7	36	26	1184	28	38	1441	34
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)	0.99		0.99	0.99		0.99	1.00		0.97	1.00		0.97
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	1759	1759	1900	1863	1863	1900	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	37	1	10	69	7	37	27	1221	29	39	1486	35
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	8	8	8	2	2	2	3	3	3	2	2	2
Cap, veh/h	158	12	119	191	22	117	288	2716	64	371	2743	65
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.78	0.78	0.78	0.78	0.78	0.78
Sat Flow, veh/h	1274	137	1369	1389	257	1356	338	3497	83	442	3532	83
Grp Volume(v), veh/h	37	0	11	69	0	44	27	612	638	39	743	778
Grp Sat Flow(s),veh/h/ln	1274	0	1506	1389	0	1612	338	1752	1827	442	1770	1845
Q Serve(g_s), s	2.5	0.0	0.6	4.3	0.0	2.3	3.0	10.8	10.8	3.0	14.6	14.6
Cycle Q Clear(g_c), s	4.8	0.0	0.6	4.9	0.0	2.3	17.6	10.8	10.8	13.8	14.6	14.6
Prop In Lane	1.00		0.91	1.00		0.84	1.00		0.05	1.00		0.05
Lane Grp Cap(c), veh/h	158	0	130	191	0	140	288	1361	1419	371	1375	1433
V/C Ratio(X)	0.23	0.00	0.08	0.36	0.00	0.32	0.09	0.45	0.45	0.11	0.54	0.54
Avail Cap(c_a), veh/h	530	0	571	597	0	611	288	1361	1419	371	1375	1433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	40.9	0.0	37.8	40.1	0.0	38.6	7.3	3.4	3.4	5.8	3.9	3.9
Incr Delay (d2), s/veh	0.8	0.0	0.3	1.1	0.0	1.3	0.6	1.1	1.0	0.4	1.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.3	1.7	0.0	1.1	0.3	5.5	5.7	0.4	7.3	7.8
LnGrp Delay(d),s/veh	41.6	0.0	38.1	41.2	0.0	39.9	7.9	4.5	4.5	6.2	5.0	5.0
LnGrp LOS	D		D	D		D	A	A	A	A	A	A
Approach Vol, veh/h		48			113			1277			1560	
Approach Delay, s/veh		40.8			40.7			4.6			5.1	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		76.3		13.7		76.3		13.7
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		43.6		34.1		43.6		34.1
Max Q Clear Time (g_c+I1), s		19.6		6.8		16.6		6.9
Green Ext Time (p_c), s		20.0		0.6		22.1		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.98	2.00	3.05	3.05
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	48	113	1277	1560
Effct. Green for Bike (s)	9.6	9.9	71.4	71.4
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	213	220	1587	1587
Bicycle Delay (s/bike)	35.9	35.6	1.9	1.9
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.56	2.66	3.17	3.40
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	1426	234	228	751	278	241	578	280	438	875	223
Future Volume (veh/h)	211	1426	234	228	751	278	241	578	280	438	875	223
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1845	1845	1900	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	222	1501	246	240	791	293	254	608	295	461	921	235
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	261	1714	280	274	1427	523	290	856	374	503	1076	465
Arrive On Green	0.08	0.39	0.39	0.08	0.40	0.40	0.08	0.24	0.24	0.15	0.31	0.31
Sat Flow, veh/h	3442	4383	717	3408	3600	1321	3408	3505	1531	3408	3505	1515
Grp Volume(v), veh/h	222	1160	587	240	737	347	254	608	295	461	921	235
Grp Sat Flow(s),veh/h/ln	1721	1695	1710	1704	1679	1563	1704	1752	1531	1704	1752	1515
Q Serve(g_s), s	12.1	60.2	60.5	13.2	32.3	32.7	14.0	30.1	34.3	25.3	46.9	24.2
Cycle Q Clear(g_c), s	12.1	60.2	60.5	13.2	32.3	32.7	14.0	30.1	34.3	25.3	46.9	24.2
Prop In Lane	1.00		0.42	1.00		0.84	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	261	1325	668	274	1331	619	290	856	374	503	1076	465
V/C Ratio(X)	0.85	0.88	0.88	0.88	0.55	0.56	0.88	0.71	0.79	0.92	0.86	0.51
Avail Cap(c_a), veh/h	355	1325	668	276	1331	619	316	897	392	567	1155	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.31	0.31	0.31
Uniform Delay (d), s/veh	86.7	53.6	53.7	86.4	44.4	44.5	86.0	65.6	67.2	79.8	61.9	54.0
Incr Delay (d2), s/veh	13.4	8.3	15.2	25.5	1.7	3.6	22.0	2.5	9.9	7.3	2.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	29.7	31.3	7.2	15.3	14.8	7.5	14.9	15.6	12.5	23.1	10.1
LnGrp Delay(d),s/veh	100.1	61.9	68.8	112.0	46.0	48.1	108.0	68.1	77.1	87.1	64.0	54.3
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	E	D
Approach Vol, veh/h		1969			1324			1157			1617	
Approach Delay, s/veh		68.3			58.5			79.2			69.2	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	81.9	34.4	52.8	21.9	80.9	22.5	64.7
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	19.6	64.4	31.6	48.6	15.4	* 69	17.6	62.6
Max Q Clear Time (g_c+I1), s	14.1	34.7	27.3	36.3	15.2	62.5	16.0	48.9
Green Ext Time (p_c), s	0.3	23.6	0.7	8.7	0.0	5.7	0.1	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	68.5
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.29	3.35	3.11	3.14
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1969	1324	1157	1617
Effct. Green for Bike (s)	73.1	72.5	45.2	57.6
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	769	763	476	606
Bicycle Delay (s/bike)	36.0	36.3	55.2	46.1
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.93	3.57	4.00	4.39
Bicycle LOS	D	D	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	1	10	1	1	1	16	961	1	130	1483	241
Future Volume (veh/h)	179	1	10	1	1	1	16	961	1	130	1483	241
Number	3	8	18	7	4	14	1	6	16	5	2	12
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		0.94	1.00		0.94
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	1900	1863	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	192	1	11	1	1	1	17	1033	1	140	1595	259
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	2	2	2
Cap, veh/h	308	1	13	193	174	274	135	1974	2	394	1791	282
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.02	0.55	0.55	0.02	0.19	0.19
Sat Flow, veh/h	1327	7	76	767	1005	1581	1757	3593	3	1774	3036	478
Grp Volume(v), veh/h	204	0	0	2	0	1	17	504	530	140	909	945
Grp Sat Flow(s),veh/h/ln	1410	0	0	1772	0	1581	1757	1752	1844	1774	1770	1745
Q Serve(g_s), s	12.5	0.0	0.0	0.0	0.0	0.0	0.4	16.4	16.4	2.9	44.8	47.8
Cycle Q Clear(g_c), s	12.6	0.0	0.0	0.1	0.0	0.0	0.4	16.4	16.4	2.9	44.8	47.8
Prop In Lane	0.94		0.05	0.50		1.00	1.00		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	322	0	0	368	0	274	135	963	1013	394	1044	1029
V/C Ratio(X)	0.63	0.00	0.00	0.01	0.00	0.00	0.13	0.52	0.52	0.36	0.87	0.92
Avail Cap(c_a), veh/h	490	0	0	560	0	465	231	963	1013	419	1044	1029
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.61	0.61	0.61	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	0.0	30.8	0.0	30.8	19.9	12.8	12.8	9.7	32.9	34.1
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.0	0.0	0.0	0.3	1.2	1.2	0.5	9.9	14.2
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 BackOfQ(50%),veh/ln	5.1	0.0	0.0	0.0	0.0	0.0	0.2	8.2	8.6	1.5	24.8	27.2
LnGrp Delay(d),s/veh	38.0	0.0	0.0	30.8	0.0	30.8	20.2	14.1	14.0	10.3	42.8	48.3
LnGrp LOS	D			C		C	C	B	B	B	D	D
Approach Vol, veh/h		204			3			1051			1994	
Approach Delay, s/veh		38.0			30.8			14.1			43.1	
Approach LOS		D			C			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.1	59.6		21.3	12.7	56.0		21.3
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7
Max Green Setting (Gmax), s	7.0	* 38		* 27	7.1	37.5		* 26
Max Q Clear Time (g_c+I1), s	2.4	49.8		2.1	4.9	18.4		14.6
Green Ext Time (p_c), s	0.0	0.0		1.2	0.1	16.8		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.92	1.99	3.00	3.15
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	204	3	1051	1994
Effct. Green for Bike (s)	18.5	18.7	44.7	54.1
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	411	416	993	1202
Bicycle Delay (s/bike)	28.4	28.2	11.4	7.2
Bicycle Compliance	Fair	Fair	Fair	Good
Bicycle LOS Score	3.00	2.67	2.98	3.57
Bicycle LOS	C	B	C	D

HCM 2010 cannot analyze U-Turning movements.

Approach	WB	NB	SB
Crosswalk Length (ft)	37.3	58.8	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.06	3.15	2.98
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	239	1272	1534
Effct. Green for Bike (s)	16.6	61.3	61.3
Cross Street Width (ft)	60.1	37.3	58.8
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	369	1362	1362
Bicycle Delay (s/bike)	29.9	4.6	4.6
Bicycle Compliance	Fair	Good	Good
Bicycle LOS Score	2.87	3.18	3.72
Bicycle LOS	C	C	D

HCM 2010 cannot analyze U-Turning movements.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	59.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-
Pedestrian Delay (s/p)	45.0	45.0	45.0
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.16	2.97	2.89
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0
Total Flow Rate (veh/h)	358	1075	1312
Effct. Green for Bike (s)	11.4	66.3	45.6
Cross Street Width (ft)	60.0	59.2	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	No	No	No
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	253	1473	1013
Bicycle Delay (s/bike)	34.3	3.1	11.0
Bicycle Compliance	Poor	Good	Fair
Bicycle LOS Score	3.07	3.35	3.19
Bicycle LOS	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	128	155	314	145	70	119	619	173	19	725	68
Future Volume (veh/h)	114	128	155	314	145	70	119	619	173	19	725	68
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)	0.96		0.93	1.00		0.97	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1845	1845	1900	1827	1827	1900
Adj Flow Rate, veh/h	119	133	161	327	151	73	124	645	180	20	755	71
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	3	3	3	4	4	4
Cap, veh/h	271	148	179	352	467	226	299	1201	335	264	1342	126
Arrive On Green	0.20	0.20	0.20	0.16	0.40	0.40	0.05	0.45	0.45	0.02	0.42	0.42
Sat Flow, veh/h	1108	737	892	1774	1176	568	1757	2686	749	1740	3204	301
Grp Volume(v), veh/h	119	0	294	327	0	224	124	421	404	20	409	417
Grp Sat Flow(s),veh/h/ln	1108	0	1630	1774	0	1744	1757	1752	1682	1740	1736	1769
Q Serve(g_s), s	14.4	0.0	26.4	21.3	0.0	13.3	6.0	26.2	26.3	1.0	26.9	26.9
Cycle Q Clear(g_c), s	14.4	0.0	26.4	21.3	0.0	13.3	6.0	26.2	26.3	1.0	26.9	26.9
Prop In Lane	1.00		0.55	1.00		0.33	1.00		0.45	1.00		0.17
Lane Grp Cap(c), veh/h	271	0	327	352	0	693	299	784	752	264	727	741
V/C Ratio(X)	0.44	0.00	0.90	0.93	0.00	0.32	0.41	0.54	0.54	0.08	0.56	0.56
Avail Cap(c_a), veh/h	297	0	366	358	0	743	339	784	752	353	727	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	0.0	58.4	39.8	0.0	31.2	25.4	30.2	30.2	25.3	33.1	33.2
Incr Delay (d2), s/veh	1.1	0.0	22.5	30.0	0.0	0.3	0.9	2.6	2.7	0.1	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	14.0	13.3	0.0	6.5	3.0	13.2	12.7	0.5	13.5	13.7
LnGrp Delay(d),s/veh	54.8	0.0	81.0	69.8	0.0	31.5	26.4	32.8	32.9	25.5	36.3	36.2
LnGrp LOS	D		F	E		C	C	C	C	C	D	D
Approach Vol, veh/h		413			551			949			846	
Approach Delay, s/veh		73.4			54.2			32.0			36.0	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.3	73.8	29.5	36.4	14.5	69.5		65.9
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 11	* 56	23.9	33.7	11.5	55.3		* 64
Max Q Clear Time (g_c+I1), s	3.0	28.3	23.3	28.4	8.0	28.9		15.3
Green Ext Time (p_c), s	0.0	11.9	0.1	1.7	0.1	11.8		4.2

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.26	2.31	2.90	2.77
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	413	551	949	846
Effct. Green for Bike (s)	28.2	57.8	71.3	62.7
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	376	771	951	836
Bicycle Delay (s/bike)	49.5	28.3	20.6	25.4
Bicycle Compliance	Poor	Fair	Fair	Fair
Bicycle LOS Score	3.16	3.39	2.89	2.81
Bicycle LOS	C	C	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Future Volume (veh/h)	197	1367	108	70	738	161	62	505	95	306	727	323
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	216	1502	119	77	811	177	68	555	104	336	799	355
Adj No. of Lanes	2	3	0	1	3	0	1	2	0	2	2	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	256	1761	139	95	1408	305	86	882	165	377	1279	565
Arrive On Green	0.07	0.37	0.37	0.05	0.34	0.34	0.05	0.30	0.30	0.11	0.36	0.36
Sat Flow, veh/h	3442	4804	380	1740	4091	886	1774	2962	553	3442	3539	1564
Grp Volume(v), veh/h	216	1060	561	77	658	330	68	331	328	336	799	355
Grp Sat Flow(s),veh/h/ln	1721	1695	1794	1740	1663	1652	1774	1770	1746	1721	1770	1564
Q Serve(g_s), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Cycle Q Clear(g_c), s	10.5	49.0	49.0	7.4	27.5	27.8	6.4	27.4	27.7	16.4	31.7	31.9
Prop In Lane	1.00		0.21	1.00		0.54	1.00		0.32	1.00		1.00
Lane Grp Cap(c), veh/h	256	1243	658	95	1144	568	86	527	520	377	1279	565
V/C Ratio(X)	0.84	0.85	0.85	0.81	0.57	0.58	0.79	0.63	0.63	0.89	0.62	0.63
Avail Cap(c_a), veh/h	287	1243	658	149	1144	568	218	527	520	415	1279	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	77.7	49.6	49.6	79.5	45.6	45.7	80.1	51.6	51.6	74.7	44.8	44.8
Incr Delay (d2), s/veh	18.3	7.5	13.3	16.6	2.1	4.3	15.1	5.6	5.7	19.5	2.3	5.2
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 BackOfQ(50%),veh/ln	5.7	24.3	26.7	4.0	12.9	13.4	3.5	14.2	14.1	8.8	15.8	14.6
LnGrp Delay(d),s/veh	96.0	57.2	62.9	96.1	47.7	50.0	95.2	57.1	57.4	94.2	47.1	50.1
LnGrp LOS	F	E	E	F	D	D	F	E	E	F	D	D
Approach Vol, veh/h		1837			1065			727			1490	
Approach Delay, s/veh		63.5			51.9			60.8			58.4	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.4	65.3	26.1	58.1	16.6	69.1	15.3	68.9
Change Period (Y+Rc), s	7.8	6.8	7.5	* 7.5	7.4	6.8	7.1	7.5
Max Green Setting (Gmax), s	14.2	55.2	20.5	* 51	14.6	55.2	20.9	50.5
Max Q Clear Time (g_c+I1), s	12.5	29.8	18.4	29.7	9.4	51.0	8.4	33.9
Green Ext Time (p_c), s	0.1	18.9	0.3	11.0	0.1	3.8	0.1	9.6

Intersection Summary	
HCM 2010 Ctrl Delay	59.2
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	102.6	101.5	70.7	84.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	7	5	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	45	45	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	85.0	85.0	85.0	85.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.32	3.26	2.78	3.08
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	1837	1065	727	1490
Effct. Green for Bike (s)	57.6	55.7	51.4	59.5
Cross Street Width (ft)	70.7	84.2	101.5	102.6
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	678	655	605	700
Bicycle Delay (s/bike)	37.2	38.4	41.4	35.9
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.65	3.43	3.71	4.36
Bicycle LOS	D	C	D	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1	4	7	1	11	6	1848	8	52	1500	4
Future Volume (veh/h)	5	1	4	7	1	11	6	1848	8	52	1500	4
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)	0.98		0.96	0.98		0.98	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	5	1	4	7	1	12	6	1945	8	55	1579	4
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	26	41	69	22	63	285	2929	12	204	2934	7
Arrive On Green	0.07	0.07	0.07	0.07	0.07	0.07	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	537	385	614	302	326	942	322	3614	15	225	3621	9
Grp Volume(v), veh/h	10	0	0	20	0	0	6	951	1002	55	771	812
Grp Sat Flow(s),veh/h/ln	1536	0	0	1571	0	0	322	1770	1860	225	1770	1861
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.6	22.1	22.1	13.3	14.7	14.7
Cycle Q Clear(g_c), s	0.5	0.0	0.0	1.1	0.0	0.0	15.3	22.1	22.1	35.5	14.7	14.7
Prop In Lane	0.50		0.40	0.35		0.60	1.00		0.01	1.00		0.00
Lane Grp Cap(c), veh/h	156	0	0	153	0	0	285	1434	1507	204	1434	1508
V/C Ratio(X)	0.06	0.00	0.00	0.13	0.00	0.00	0.02	0.66	0.66	0.27	0.54	0.54
Avail Cap(c_a), veh/h	558	0	0	564	0	0	285	1434	1507	204	1434	1508
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	0.0	0.0	44.1	0.0	0.0	5.8	3.9	3.9	11.2	3.2	3.2
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	0.0	0.1	2.4	2.3	3.2	1.5	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 BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.5	0.0	0.0	0.1	11.3	12.1	1.0	7.4	7.8
LnGrp Delay(d),s/veh	44.0	0.0	0.0	44.5	0.0	0.0	5.9	6.3	6.2	14.4	4.6	4.6
LnGrp LOS	D			D			A	A	A	B	A	A
Approach Vol, veh/h		10			20			1959			1638	
Approach Delay, s/veh		44.0			44.5			6.3			4.9	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		87.4		12.6		87.4		12.6
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		53.7		34.0		53.7		34.0
Max Q Clear Time (g_c+I1), s		24.1		2.5		37.5		3.1
Green Ext Time (p_c), s		27.8		0.1		15.6		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	6.0
HCM 2010 LOS	A

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.3	60.1	60.2
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	50.0	50.0	50.0	50.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.74	1.76	3.24	3.25
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	10	20	1959	1638
Effct. Green for Bike (s)	6.7	6.7	92.0	92.0
Cross Street Width (ft)	60.1	60.2	24.3	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	134	134	1840	1840
Bicycle Delay (s/bike)	43.5	43.5	0.3	0.3
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.50	2.51	3.55	3.28
Bicycle LOS	B	B	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	4	37	97	8	34	60	1500	161	43	1211	62
Future Volume (veh/h)	31	4	37	97	8	34	60	1500	161	43	1211	62
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)	0.99		0.98	0.99		0.97	1.00		0.96	1.00		0.96
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	4	39	101	8	35	62	1562	168	45	1261	65
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	32	126	212	23	56	314	1972	209	214	2074	107
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.05	0.61	0.61	0.04	0.61	0.61
Sat Flow, veh/h	554	209	827	987	153	366	1774	3215	341	1774	3416	176
Grp Volume(v), veh/h	75	0	0	144	0	0	62	850	880	45	652	674
Grp Sat Flow(s),veh/h/ln	1590	0	0	1507	0	0	1774	1770	1787	1774	1770	1823
Q Serve(g_s), s	0.0	0.0	0.0	4.5	0.0	0.0	1.2	35.7	37.5	0.9	22.9	23.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	8.5	0.0	0.0	1.2	35.7	37.5	0.9	22.9	23.0
Prop In Lane	0.43		0.52	0.70		0.24	1.00		0.19	1.00		0.10
Lane Grp Cap(c), veh/h	294	0	0	291	0	0	314	1086	1096	214	1074	1106
V/C Ratio(X)	0.25	0.00	0.00	0.49	0.00	0.00	0.20	0.78	0.80	0.21	0.61	0.61
Avail Cap(c_a), veh/h	580	0	0	567	0	0	344	1086	1096	256	1074	1106
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.70	0.70	0.70	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	0.0	0.0	39.3	0.0	0.0	9.2	14.4	14.7	14.4	12.2	12.3
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.3	0.0	0.0	0.2	4.0	4.5	0.5	2.6	2.5
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 BackOfQ(50%),veh/ln	1.9	0.0	0.0	3.8	0.0	0.0	0.6	18.4	19.7	0.6	11.8	12.2
LnGrp Delay(d),s/veh	38.0	0.0	0.0	40.5	0.0	0.0	9.5	18.4	19.2	14.9	14.8	14.8
LnGrp LOS	D			D			A	B	B	B	B	B
Approach Vol, veh/h		75			144			1792			1371	
Approach Delay, s/veh		38.0			40.5			18.5			14.8	
Approach LOS		D			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.7	67.8		21.5	11.3	67.2		21.5
Change Period (Y+Rc), s	6.4	6.5		* 6.2	6.4	6.5		* 6.2
Max Green Setting (Gmax), s	6.6	39.5		* 35	6.6	39.5		* 35
Max Q Clear Time (g_c+I1), s	2.9	39.5		5.9	3.2	25.0		10.5
Green Ext Time (p_c), s	0.0	0.0		1.4	0.0	13.2		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.1	24.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	0	0
Ped. Right-Left Flow Rate (p/h)	0	0	0	0
Ped. R. Sidewalk Flow Rate (p/h)	0	0	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	0.0	0.0	0.0	0.0
Right Corner Quality of Service	-	-	-	-
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	-	-
Pedestrian Delay (s/p)	50.0	50.0	50.0	50.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.81	1.88	3.14	3.09
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	75	144	1792	1371
Effct. Green for Bike (s)	14.9	14.9	64.5	61.7
Cross Street Width (ft)	60.0	60.0	24.0	24.1
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	No	No	No	No
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	298	298	1290	1234
Bicycle Delay (s/bike)	36.2	36.2	6.3	7.3
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.60	2.72	3.41	3.06
Bicycle LOS	B	B	C	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	34	72	65	25	5	158	1618	59	5	1298	206
Future Volume (veh/h)	181	34	72	65	25	5	158	1618	59	5	1298	206
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.99	1.00		0.97	1.00		0.97
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	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	191	36	76	68	26	5	166	1703	62	5	1366	206
Adj No. of Lanes	0	1	0	0	1	0	1	2	0	1	2	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	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	249	40	84	243	88	15	224	2396	87	152	1832	273
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.05	0.69	0.69	0.60	0.60	0.60
Sat Flow, veh/h	926	175	369	891	388	68	1774	3480	126	270	3077	459
Grp Volume(v), veh/h	303	0	0	99	0	0	166	862	903	5	779	793
Grp Sat Flow(s),veh/h/ln	1469	0	0	1347	0	0	1774	1770	1836	270	1770	1766
Q Serve(g_s), s	21.1	0.0	0.0	0.0	0.0	0.0	5.3	44.4	45.2	1.7	47.7	49.5
Cycle Q Clear(g_c), s	30.1	0.0	0.0	9.0	0.0	0.0	5.3	44.4	45.2	33.0	47.7	49.5
Prop In Lane	0.63		0.25	0.69		0.05	1.00		0.07	1.00		0.26
Lane Grp Cap(c), veh/h	372	0	0	346	0	0	224	1218	1264	152	1053	1051
V/C Ratio(X)	0.81	0.00	0.00	0.29	0.00	0.00	0.74	0.71	0.71	0.03	0.74	0.75
Avail Cap(c_a), veh/h	467	0	0	440	0	0	354	1218	1264	152	1053	1051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.4	0.0	0.0	48.2	0.0	0.0	27.0	14.2	14.3	28.7	21.9	22.3
Incr Delay (d2), s/veh	8.6	0.0	0.0	0.4	0.0	0.0	4.8	3.5	3.5	0.4	4.7	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.1	0.0	0.0	3.5	0.0	0.0	4.5	22.7	24.0	0.1	24.5	25.5
LnGrp Delay(d),s/veh	65.0	0.0	0.0	48.6	0.0	0.0	31.8	17.7	17.8	29.1	26.6	27.3
LnGrp LOS	E			D			C	B	B	C	C	C
Approach Vol, veh/h		303			99			1931			1577	
Approach Delay, s/veh		65.0			48.6			18.9			27.0	
Approach LOS		E			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	14.0	95.8		40.2		109.8		40.2
Change Period (Y+Rc), s	6.4	6.5		* 6.2		* 6.5		* 6.2
Max Green Setting (Gmax), s	18.6	68.5		* 44		* 94		* 44
Max Q Clear Time (g_c+I1), s	7.3	51.5		32.1		47.2		11.0
Green Ext Time (p_c), s	0.3	15.9		1.9		39.5		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	24.1	60.0	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	2	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	4	3	4	6
Ped. Right-Left Flow Rate (p/h)	4	3	4	6
Ped. R. Sidewalk Flow Rate (p/h)	5	6	1	2
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	30	25	40	40
Right Corner Area per Ped (sq.ft)	3435.7	3002.3	4816.2	3271.0
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.09	1.83	3.22	3.23
Pedestrian Crosswalk LOS	B	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	1	3
Total Flow Rate (veh/h)	303	99	1931	1577
Effct. Green for Bike (s)	36.9	37.2	100.5	80.2
Cross Street Width (ft)	60.0	59.9	24.1	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	492	496	1340	1069
Bicycle Delay (s/bike)	42.6	42.4	8.2	16.3
Bicycle Compliance	Poor	Poor	Good	Fair
Bicycle LOS Score	2.98	2.64	3.52	3.23
Bicycle LOS	C	B	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	17	7	86	24	55	113	1573	83	52	1183	55
Future Volume (veh/h)	46	17	7	86	24	55	113	1573	83	52	1183	55
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)	0.99		0.99	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1845	1845	1900
Adj Flow Rate, veh/h	49	18	7	91	26	59	120	1673	88	55	1259	59
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	3	3	3
Cap, veh/h	177	161	63	231	63	143	322	2540	133	208	2531	118
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	1294	1272	495	1362	497	1129	415	3416	178	268	3403	159
Grp Volume(v), veh/h	49	0	25	91	0	85	120	861	900	55	648	670
Grp Sat Flow(s),veh/h/ln	1294	0	1767	1362	0	1626	415	1770	1824	268	1752	1810
Q Serve(g_s), s	3.4	0.0	1.2	6.0	0.0	4.6	15.7	23.1	23.7	12.4	14.3	14.3
Cycle Q Clear(g_c), s	8.0	0.0	1.2	7.2	0.0	4.6	30.1	23.1	23.7	36.1	14.3	14.3
Prop In Lane	1.00		0.28	1.00		0.69	1.00		0.10	1.00		0.09
Lane Grp Cap(c), veh/h	177	0	224	231	0	206	322	1316	1357	208	1303	1346
V/C Ratio(X)	0.28	0.00	0.11	0.39	0.00	0.41	0.37	0.65	0.66	0.26	0.50	0.50
Avail Cap(c_a), veh/h	478	0	634	548	0	584	322	1316	1357	208	1303	1346
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	41.9	0.0	36.7	39.9	0.0	38.2	11.1	6.1	6.2	15.3	4.9	5.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	1.1	0.0	1.3	3.3	2.5	2.6	2.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.6	2.3	0.0	2.1	2.1	11.9	12.7	1.1	7.2	7.4
LnGrp Delay(d),s/veh	42.7	0.0	37.0	41.0	0.0	39.5	14.4	8.6	8.7	17.6	6.0	6.0
LnGrp LOS	D		D	D		D	B	A	A	B	A	A
Approach Vol, veh/h		74			176			1881			1373	
Approach Delay, s/veh		40.8			40.3			9.0			6.4	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		77.1		17.9		77.1		17.9
Change Period (Y+Rc), s		6.4		5.9		6.4		5.9
Max Green Setting (Gmax), s		48.6		34.1		48.6		34.1
Max Q Clear Time (g_c+I1), s		32.1		10.0		38.1		9.2
Green Ext Time (p_c), s		15.6		1.1		10.1		1.1

Intersection Summary			
HCM 2010 Ctrl Delay			10.3
HCM 2010 LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.1	60.2	59.9
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	3	5	5	13
Ped. Right-Left Flow Rate (p/h)	3	5	5	13
Ped. R. Sidewalk Flow Rate (p/h)	11	7	2	6
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	2682.4	1670.5	3286.6	1893.4
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.1	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.03	2.04	3.15	3.13
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	0	0	0
Total Flow Rate (veh/h)	74	176	1881	1373
Effct. Green for Bike (s)	11.6	11.7	71.0	71.0
Cross Street Width (ft)	60.2	59.9	36.1	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	244	246	1495	1495
Bicycle Delay (s/bike)	36.6	36.5	3.0	3.0
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	2.60	2.77	3.66	3.24
Bicycle LOS	B	C	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	294	742	228	301	1609	542	338	932	241	344	784	263
Future Volume (veh/h)	294	742	228	301	1609	542	338	932	241	344	784	263
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.91	1.00		0.91	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	306	773	238	314	1676	565	352	971	251	358	817	274
Adj No. of Lanes	2	3	0	2	3	0	2	2	1	2	2	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	286	1569	476	353	1622	520	372	895	363	337	860	352
Arrive On Green	0.08	0.42	0.42	0.10	0.44	0.44	0.11	0.25	0.25	0.10	0.24	0.24
Sat Flow, veh/h	3442	3769	1142	3442	3712	1190	3442	3539	1433	3442	3539	1450
Grp Volume(v), veh/h	306	694	317	314	1523	718	352	971	251	358	817	274
Grp Sat Flow(s),veh/h/ln	1721	1695	1521	1721	1695	1511	1721	1770	1433	1721	1770	1450
Q Serve(g_s), s	16.6	30.1	30.7	18.0	87.4	87.4	20.3	50.6	31.7	19.6	45.4	35.3
Cycle Q Clear(g_c), s	16.6	30.1	30.7	18.0	87.4	87.4	20.3	50.6	31.7	19.6	45.4	35.3
Prop In Lane	1.00		0.75	1.00		0.79	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	286	1411	633	353	1482	660	372	895	363	337	860	352
V/C Ratio(X)	1.07	0.49	0.50	0.89	1.03	1.09	0.95	1.08	0.69	1.06	0.95	0.78
Avail Cap(c_a), veh/h	286	1411	633	437	1482	660	372	895	363	337	860	352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	91.7	42.8	43.0	88.6	56.3	56.3	88.6	74.7	67.6	90.2	74.5	70.7
Incr Delay (d2), s/veh	73.4	1.2	2.8	17.0	30.9	61.0	33.2	55.6	5.6	58.6	15.5	7.7
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 BackOfQ(50%),veh/ln	10.8	14.3	13.4	9.4	47.3	47.7	11.4	31.7	13.1	12.1	24.1	14.9
LnGrp Delay(d),s/veh	165.1	44.1	45.8	105.6	87.2	117.3	121.8	130.3	73.2	148.8	90.0	78.3
LnGrp LOS	F	D	D	F	F	F	F	F	E	F	F	E
Approach Vol, veh/h		1317			2555			1574			1449	
Approach Delay, s/veh		72.6			97.9			119.3			102.3	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	94.0	26.0	57.0	27.1	89.9	28.0	55.0
Change Period (Y+Rc), s	6.4	6.6	6.4	6.4	6.6	* 6.6	6.4	6.4
Max Green Setting (Gmax), s	16.6	87.4	19.6	50.6	25.4	* 79	21.6	48.6
Max Q Clear Time (g_c+I1), s	18.6	89.4	21.6	52.6	20.0	32.7	22.3	47.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.5	38.4	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	98.9
HCM 2010 LOS	F

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	97.5	97.4	84.2	84.1
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	8	8	7	7
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	8	4	6	2
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	37	42	35	32
Ped. Right-Left Flow Rate (p/h)	37	42	35	32
Ped. R. Sidewalk Flow Rate (p/h)	52	15	19	60
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	40	40	40	40
Right Corner Area per Ped (sq.ft)	326.0	390.5	365.8	324.6
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	100.0	100.0	100.0	100.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	3.36	3.41	3.18	3.25
Pedestrian Crosswalk LOS	C	C	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	8	6	0	1
Total Flow Rate (veh/h)	1317	2555	1574	1449
Effct. Green for Bike (s)	81.3	87.4	50.6	48.6
Cross Street Width (ft)	84.2	84.1	97.4	97.5
Through Lanes Number	3	3	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	813	874	506	486
Bicycle Delay (s/bike)	35.4	31.8	55.8	57.3
Bicycle Compliance	Poor	Poor	Poor	Poor
Bicycle LOS Score	3.57	4.25	4.35	4.25
Bicycle LOS	D	E	E	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	1	19	1	1	1	22	1519	1	31	1405	157
Future Volume (veh/h)	182	1	19	1	1	1	22	1519	1	31	1405	157
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	1.00		0.97	0.99		0.92	1.00		0.93
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	1900	1845	1900	1900	1863	1863	1845	1845	1900	1863	1863	1900
Adj Flow Rate, veh/h	186	1	19	1	1	1	22	1550	1	32	1434	160
Adj No. of Lanes	0	1	0	0	1	1	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	2	2	2	3	3	3	2	2	2
Cap, veh/h	238	1	21	161	152	249	299	2560	2	247	2280	252
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.02	0.71	0.71	0.05	1.00	1.00
Sat Flow, veh/h	1249	7	128	818	940	1539	1757	3594	2	1774	3186	351
Grp Volume(v), veh/h	206	0	0	2	0	1	22	756	795	32	789	805
Grp Sat Flow(s),veh/h/ln	1383	0	0	1758	0	1539	1757	1752	1844	1774	1770	1768
Q Serve(g_s), s	27.7	0.0	0.0	0.0	0.0	0.1	0.6	41.4	41.5	0.9	0.0	0.0
Cycle Q Clear(g_c), s	27.9	0.0	0.0	0.2	0.0	0.1	0.6	41.4	41.5	0.9	0.0	0.0
Prop In Lane	0.90		0.09	0.50		1.00	1.00		0.00	1.00		0.20
Lane Grp Cap(c), veh/h	259	0	0	312	0	249	299	1248	1313	247	1267	1265
V/C Ratio(X)	0.79	0.00	0.00	0.01	0.00	0.00	0.07	0.61	0.61	0.13	0.62	0.64
Avail Cap(c_a), veh/h	322	0	0	386	0	320	381	1248	1313	324	1267	1265
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	78.6	0.0	0.0	66.9	0.0	66.8	6.8	13.8	13.8	11.3	0.0	0.0
Incr Delay (d2), s/veh	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	2.3	2.5
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 BackOfQ(50%),veh/ln	11.5	0.0	0.0	0.1	0.0	0.0	0.3	20.0	21.1	0.5	0.8	0.9
LnGrp Delay(d),s/veh	89.0	0.0	0.0	66.9	0.0	66.8	6.8	14.0	14.0	11.6	2.3	2.5
LnGrp LOS	F			E		E	A	B	B	B	A	A
Approach Vol, veh/h		206			3			1573			1626	
Approach Delay, s/veh		89.0			66.9			13.9			2.6	
Approach LOS		F			E			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	142.5		36.4	11.8	141.8		36.4				
Change Period (Y+Rc), s	7.0	* 6.5		* 5.7	6.9	6.5		* 5.7				
Max Green Setting (Gmax), s	13.0	* 1.2E2		* 40	13.1	118.5		* 39				
Max Q Clear Time (g_c+I1), s	2.6	2.0		2.2	2.9	43.5		29.9				
Green Ext Time (p_c), s	0.0	70.3		1.4	0.0	53.3		0.8				

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	24.0	36.0	72.0	72.5
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	2	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	2	6	8	4
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	0	43	31
Ped. Right-Left Flow Rate (p/h)	0	0	43	31
Ped. R. Sidewalk Flow Rate (p/h)	32	42	0	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	25	25	40	40
Right Corner Area per Ped (sq.ft)	574.5	665.6	788.3	1116.4
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	-	-	F	F
Pedestrian Delay (s/p)	95.0	95.0	95.0	95.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	1.91	1.99	3.13	3.21
Pedestrian Crosswalk LOS	A	A	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	0	1	15	9
Total Flow Rate (veh/h)	206	3	1573	1626
Effct. Green for Bike (s)	33.2	33.4	133.8	136.6
Cross Street Width (ft)	72.0	72.5	36.0	24.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	349	352	1408	1438
Bicycle Delay (s/bike)	64.7	64.6	8.4	7.5
Bicycle Compliance	Poor	Poor	Good	Good
Bicycle LOS Score	3.00	2.67	3.41	3.27
Bicycle LOS	C	B	C	C

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	148	14	72	1663	182	30	1441
Future Volume (veh/h)	148	14	72	1663	182	30	1441
Number	3	18		2	12	1	6
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00			0.96	1.00	
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863		1828	1900	1863	1863
Adj Flow Rate, veh/h	154	15		1732	190	31	1501
Adj No. of Lanes	1	1		2	0	1	2
Peak Hour Factor	0.96	0.96		0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2		4	4	2	2
Cap, veh/h	194	173		2406	258	252	2702
Arrive On Green	0.11	0.11		1.00	1.00	0.76	0.76
Sat Flow, veh/h	1774	1583		3242	338	231	3632
Grp Volume(v), veh/h	154	15		937	985	31	1501
Grp Sat Flow(s),veh/h/ln	1774	1583		1736	1752	231	1770
Q Serve(g_s), s	8.0	0.8		0.0	0.0	3.5	16.5
Cycle Q Clear(g_c), s	8.0	0.8		0.0	0.0	3.5	16.5
Prop In Lane	1.00	1.00			0.19	1.00	
Lane Grp Cap(c), veh/h	194	173		1326	1338	252	2702
V/C Ratio(X)	0.80	0.09		0.71	0.74	0.12	0.56
Avail Cap(c_a), veh/h	566	505		1326	1338	252	2702
HCM Platoon Ratio	1.00	1.00		2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.3	38.1		0.0	0.0	3.1	4.6
Incr Delay (d2), s/veh	7.3	0.2		3.2	3.6	1.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.4		1.2	1.4	0.3	8.2
LnGrp Delay(d),s/veh	48.5	38.3		3.2	3.6	4.1	5.4
LnGrp LOS	D	D		A	A	A	A
Approach Vol, veh/h	169			1922			1532
Approach Delay, s/veh	47.6			3.4			5.4
Approach LOS	D			A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		78.9				78.9		16.1
Change Period (Y+Rc), s		6.4				6.4		5.7
Max Green Setting (Gmax), s		52.6				52.6		30.3
Max Q Clear Time (g_c+I1), s		2.0				18.5		10.0
Green Ext Time (p_c), s		44.9				31.3		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		6.3
HCM 2010 LOS		A

Notes

User approved ignoring U-Turning movement.

Approach	WB	NB	SB
Crosswalk Length (ft)	37.2	60.1	60.1
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	4	5
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	6	8
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	0	6	9
Ped. Right-Left Flow Rate (p/h)	0	6	9
Ped. R. Sidewalk Flow Rate (p/h)	32	11	0
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	25	40	40
Right Corner Area per Ped (sq.ft)	1447.3	3154.1	2400.3
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0
Crosswalk Circulation Code	-	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.06	3.36	3.16
Pedestrian Crosswalk LOS	B	C	C

Approach	WB	NB	SB
Bicycle Flow Rate (bike/h)	1	3	3
Total Flow Rate (veh/h)	169	1998	1532
Effct. Green for Bike (s)	13.6	69.3	69.3
Cross Street Width (ft)	60.1	37.2	60.1
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	286	1459	1459
Bicycle Delay (s/bike)	34.9	3.5	3.5
Bicycle Compliance	Poor	Good	Good
Bicycle LOS Score	2.76	3.78	3.74
Bicycle LOS	C	D	D

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (veh/h)	90	236	294	1291	18	1135	77
Future Volume (veh/h)	90	236	294	1291	18	1135	77
Number	7	14	1	6		2	12
Initial Q (Qb), veh	0	0	0	0		0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00				0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00		1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1827	1827		1863	1900
Adj Flow Rate, veh/h	95	248	309	1359		1195	81
Adj No. of Lanes	1	1	1	2		2	0
Peak Hour Factor	0.95	0.95	0.95	0.95		0.95	0.95
Percent Heavy Veh, %	2	2	4	4		2	2
Cap, veh/h	323	288	358	2389		1742	118
Arrive On Green	0.18	0.18	0.10	0.69		0.52	0.52
Sat Flow, veh/h	1774	1583	1740	3563		3449	227
Grp Volume(v), veh/h	95	248	309	1359		629	647
Grp Sat Flow(s),veh/h/ln	1774	1583	1740	1736		1770	1813
Q Serve(g_s), s	4.4	14.4	7.4	19.1		25.2	25.3
Cycle Q Clear(g_c), s	4.4	14.4	7.4	19.1		25.2	25.3
Prop In Lane	1.00	1.00	1.00				0.13
Lane Grp Cap(c), veh/h	323	288	358	2389		919	941
V/C Ratio(X)	0.29	0.86	0.86	0.57		0.69	0.69
Avail Cap(c_a), veh/h	527	470	393	2389		919	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00		1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00		1.00	1.00
Uniform Delay (d), s/veh	33.6	37.7	17.2	7.6		17.0	17.1
Incr Delay (d2), s/veh	0.5	8.7	16.6	1.0		4.1	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	7.0	6.0	9.4		13.3	13.6
LnGrp Delay(d),s/veh	34.1	46.4	33.7	8.6		21.2	21.1
LnGrp LOS	C	D	C	A		C	C
Approach Vol, veh/h	343			1668		1276	
Approach Delay, s/veh	43.0			13.2		21.2	
Approach LOS	D			B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	16.1	55.8		23.1		71.9		
Change Period (Y+Rc), s	6.5	6.5		* 5.8		6.5		
Max Green Setting (Gmax), s	11.5	36.5		* 28		54.5		
Max Q Clear Time (g_c+I1), s	9.4	27.3		16.4		21.1		
Green Ext Time (p_c), s	0.2	8.2		0.9		24.6		

Intersection Summary			
HCM 2010 Ctrl Delay			19.4
HCM 2010 LOS			B

Notes

User approved ignoring U-Turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	NB	SB
Crosswalk Length (ft)	36.0	60.0	59.2
Crosswalk Width (ft)	12.0	12.0	12.0
Total Number of Lanes Crossed	3	5	4
Number of Right-Turn Islands	0	0	0
Type of Control	None	None	None
Corresponding Signal Phase	2	4	6
Effective Walk Time (s)	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	4	5	2
Ped. Right-Left Flow Rate (p/h)	4	5	2
Ped. R. Sidewalk Flow Rate (p/h)	7	0	4
Veh. Perm. L. Flow in Walk (v/h)	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0
85th percentile speed (mph)	30	40	40
Right Corner Area per Ped (sq.ft)	2894.6	5177.5	4534.0
Right Corner Quality of Service	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.1
Crosswalk Circulation Code	F	F	F
Pedestrian Delay (s/p)	47.5	47.5	47.5
Pedestrian Compliance Code	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.19	3.12	3.04
Pedestrian Crosswalk LOS	B	C	C

Approach	EB	NB	SB
Bicycle Flow Rate (bike/h)	1	1	2
Total Flow Rate (veh/h)	343	1668	1296
Effct. Green for Bike (s)	10.5	72.2	44.0
Cross Street Width (ft)	60.0	59.2	36.0
Through Lanes Number	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes
On Street Parking?	No	No	No
Bicycle Lane Capacity (bike/h)	221	1520	926
Bicycle Delay (s/bike)	37.6	2.7	13.7
Bicycle Compliance	Poor	Good	Fair
Bicycle LOS Score	3.04	3.84	3.18
Bicycle LOS	C	D	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	164	113	307	208	102	143	878	338	35	635	112
Future Volume (veh/h)	140	164	113	307	208	102	143	878	338	35	635	112
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)	0.90		0.83	1.00		0.90	1.00		0.97	1.00		0.97
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	1776	1776	1900	1863	1863	1900	1827	1827	1900	1863	1863	1900
Adj Flow Rate, veh/h	152	178	123	334	226	111	155	954	367	38	690	122
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	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
Percent Heavy Veh, %	7	7	7	2	2	2	4	4	4	2	2	2
Cap, veh/h	237	188	130	334	459	225	307	1051	400	129	1195	211
Arrive On Green	0.21	0.21	0.21	0.15	0.40	0.40	0.07	0.43	0.43	0.03	0.40	0.40
Sat Flow, veh/h	896	895	618	1774	1136	558	1740	2433	927	1774	2989	528
Grp Volume(v), veh/h	152	0	301	334	0	337	155	678	643	38	408	404
Grp Sat Flow(s),veh/h/ln	896	0	1513	1774	0	1694	1740	1736	1624	1774	1770	1747
Q Serve(g_s), s	24.2	0.0	29.4	22.9	0.0	22.2	7.8	54.6	55.9	1.9	27.0	27.1
Cycle Q Clear(g_c), s	24.2	0.0	29.4	22.9	0.0	22.2	7.8	54.6	55.9	1.9	27.0	27.1
Prop In Lane	1.00		0.41	1.00		0.33	1.00		0.57	1.00		0.30
Lane Grp Cap(c), veh/h	237	0	318	334	0	684	307	749	701	129	708	699
V/C Ratio(X)	0.64	0.00	0.95	1.00	0.00	0.49	0.50	0.90	0.92	0.29	0.58	0.58
Avail Cap(c_a), veh/h	237	0	320	334	0	688	360	749	701	145	708	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.3	0.0	58.4	43.6	0.0	33.3	26.6	39.7	40.1	34.3	35.1	35.1
Incr Delay (d2), s/veh	5.8	0.0	36.0	49.0	0.0	0.6	1.3	16.4	18.9	1.3	3.4	3.5
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 BackOfQ(50%),veh/ln	6.4	0.0	15.5	18.4	0.0	10.5	3.8	29.6	28.7	1.0	13.8	13.7
LnGrp Delay(d),s/veh	62.1	0.0	94.4	92.6	0.0	33.8	27.8	56.2	59.0	35.6	38.5	38.6
LnGrp LOS	E		F	F		C	C	E	E	D	D	D
Approach Vol, veh/h		453			671			1476			850	
Approach Delay, s/veh		83.5			63.1			54.4			38.4	
Approach LOS		F			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	71.5	29.0	37.9	16.4	66.7		66.9
Change Period (Y+Rc), s	* 6.9	* 6.7	6.1	6.3	6.5	6.7		* 6.3
Max Green Setting (Gmax), s	* 6.1	* 64	22.9	31.7	14.5	55.3		* 61
Max Q Clear Time (g_c+I1), s	3.9	57.9	24.9	31.4	9.8	29.1		24.2
Green Ext Time (p_c), s	0.0	4.7	0.0	0.2	0.2	16.5		5.8

Intersection Summary	
HCM 2010 Ctrl Delay	56.0
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Approach	EB	WB	NB	SB
Crosswalk Length (ft)	36.0	36.0	60.0	60.0
Crosswalk Width (ft)	12.0	12.0	12.0	12.0
Total Number of Lanes Crossed	3	3	5	5
Number of Right-Turn Islands	0	0	0	0
Type of Control	None	None	None	None
Corresponding Signal Phase	6	2	4	8
Effective Walk Time (s)	0.0	0.0	0.0	0.0
Right Corner Size A (ft)	9.0	9.0	9.0	9.0
Right Corner Size B (ft)	9.0	9.0	9.0	9.0
Right Corner Curb Radius (ft)	0.0	0.0	0.0	0.0
Right Corner Total Area (sq.ft)	81.00	81.00	81.00	81.00
Ped. Left-Right Flow Rate (p/h)	48	40	6	9
Ped. Right-Left Flow Rate (p/h)	48	40	6	9
Ped. R. Sidewalk Flow Rate (p/h)	5	10	76	22
Veh. Perm. L. Flow in Walk (v/h)	0	0	0	0
Veh. Perm. R. Flow in Walk (v/h)	0	0	0	0
Veh. RTOR Flow in Walk (v/h)	0	0	0	0
85th percentile speed (mph)	35	35	40	40
Right Corner Area per Ped (sq.ft)	600.3	632.5	408.3	496.7
Right Corner Quality of Service	A	A	A	A
Ped. Circulation Area (sq.ft)	0.0	0.0	0.0	0.0
Crosswalk Circulation Code	F	F	F	F
Pedestrian Delay (s/p)	75.0	75.0	75.0	75.0
Pedestrian Compliance Code	Poor	Poor	Poor	Poor
Pedestrian Crosswalk Score	2.33	2.45	3.01	2.87
Pedestrian Crosswalk LOS	B	B	C	C

Approach	EB	WB	NB	SB
Bicycle Flow Rate (bike/h)	7	13	1	4
Total Flow Rate (veh/h)	453	671	1476	850
Effct. Green for Bike (s)	30.1	59.3	67.7	59.2
Cross Street Width (ft)	60.0	60.0	36.0	36.0
Through Lanes Number	1	1	2	2
Through Lane Width (ft)	12.0	12.0	12.0	12.0
Bicycle Lane Width (ft)	0.0	0.0	0.0	0.0
Paved Shoulder Width (ft)	0.0	0.0	0.0	0.0
Curb Is Present?	Yes	Yes	Yes	Yes
On Street Parking?	No	No	No	No
Bicycle Lane Capacity (bike/h)	401	791	903	789
Bicycle Delay (s/bike)	48.1	27.6	22.6	27.5
Bicycle Compliance	Poor	Fair	Fair	Fair
Bicycle LOS Score	3.23	3.58	3.33	2.81
Bicycle LOS	C	D	C	C

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	94	55	953	1495	15
Future Vol, veh/h	0	94	55	953	1495	15
Conflicting Peds, #/hr	13	0	37	0	0	37
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	101	59	1025	1608	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	849	1661	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	0	304	379	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	293	379	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.6	0.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	379	-	293	-	-
HCM Lane V/C Ratio	0.156	-	0.345	-	-
HCM Control Delay (s)	16.2	-	23.6	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.5	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	63	55	1473	1286	25
Future Vol, veh/h	0	63	55	1473	1286	25
Conflicting Peds, #/hr	5	0	37	0	0	37
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	67	59	1567	1368	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	734	1432	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	0	363	465	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	350	465	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	465	-	350	-	-
HCM Lane V/C Ratio	0.126	-	0.191	-	-
HCM Control Delay (s)	13.9	-	17.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.7	-	-

Intersection						
Int Delay, s/veh	1.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	113	65	1144	1794	18
Future Vol, veh/h	0	113	65	1144	1794	18
Conflicting Peds, #/hr	13	0	37	0	0	37
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	122	70	1230	1929	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1011	1985	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	0	237	283	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	229	283	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.2	1.2	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	283	-	229	-	-
HCM Lane V/C Ratio	0.247	-	0.531	-	-
HCM Control Delay (s)	21.8	-	37.2	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.9	-	2.8	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	76	64	1768	1543	30
Future Vol, veh/h	0	76	64	1768	1543	30
Conflicting Peds, #/hr	5	0	37	0	0	37
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	81	68	1881	1641	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	874	1710	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.16	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.23	-	-	-
Pot Cap-1 Maneuver	0	293	363	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	283	363	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.7	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	363	-	283	-	-
HCM Lane V/C Ratio	0.188	-	0.286	-	-
HCM Control Delay (s)	17.2	-	22.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0.7	-	1.1	-	-

APPENDIX E-6

TECHNICAL MEMORANDUM 5: FUTURE TRAVEL DEMAND REPORT

Turning Movement Counts

Figure F.1 – 2020 No-Build Turning Volumes

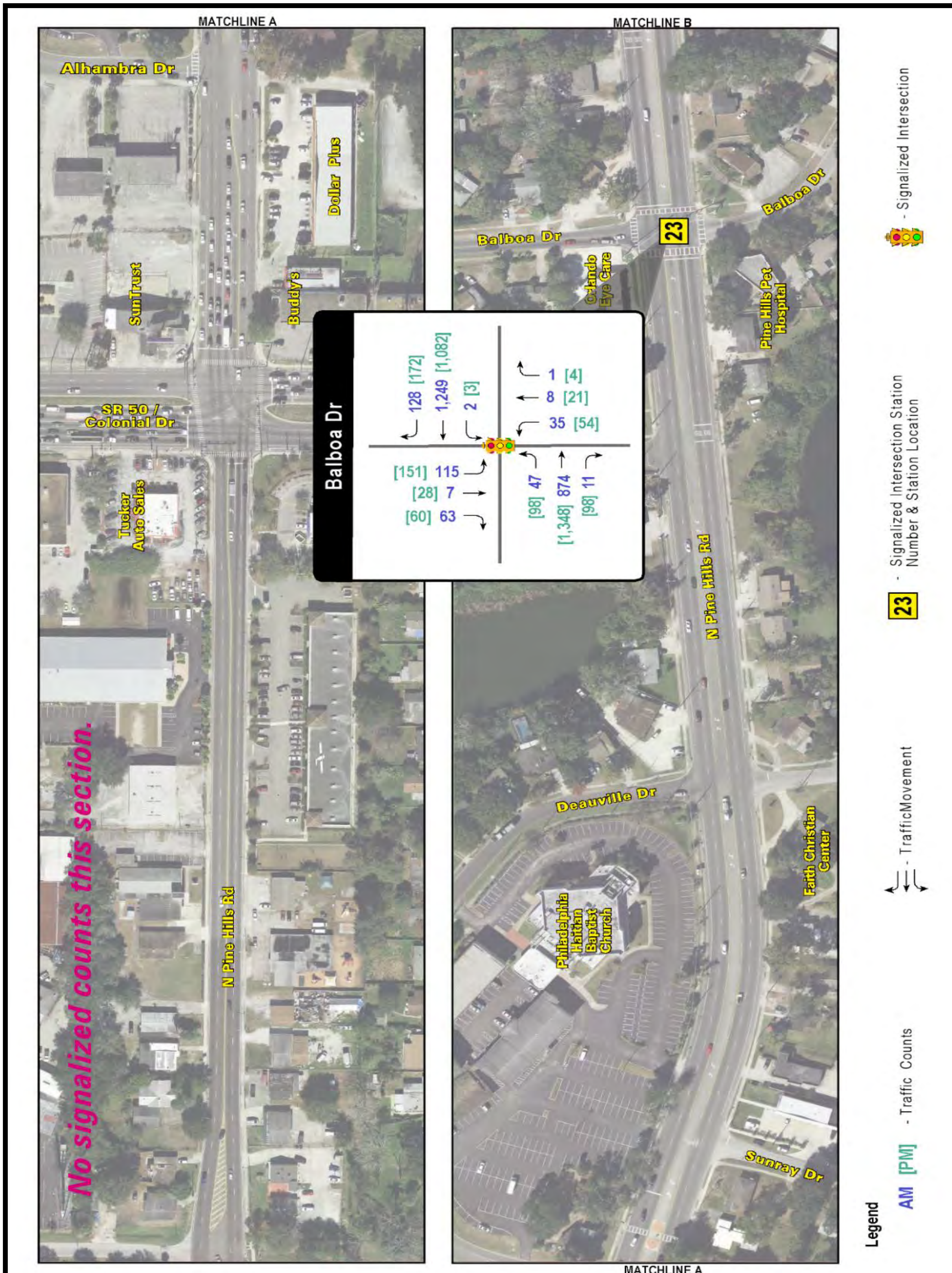


Figure F.1, continued – 2020 No-Build Turning Volumes

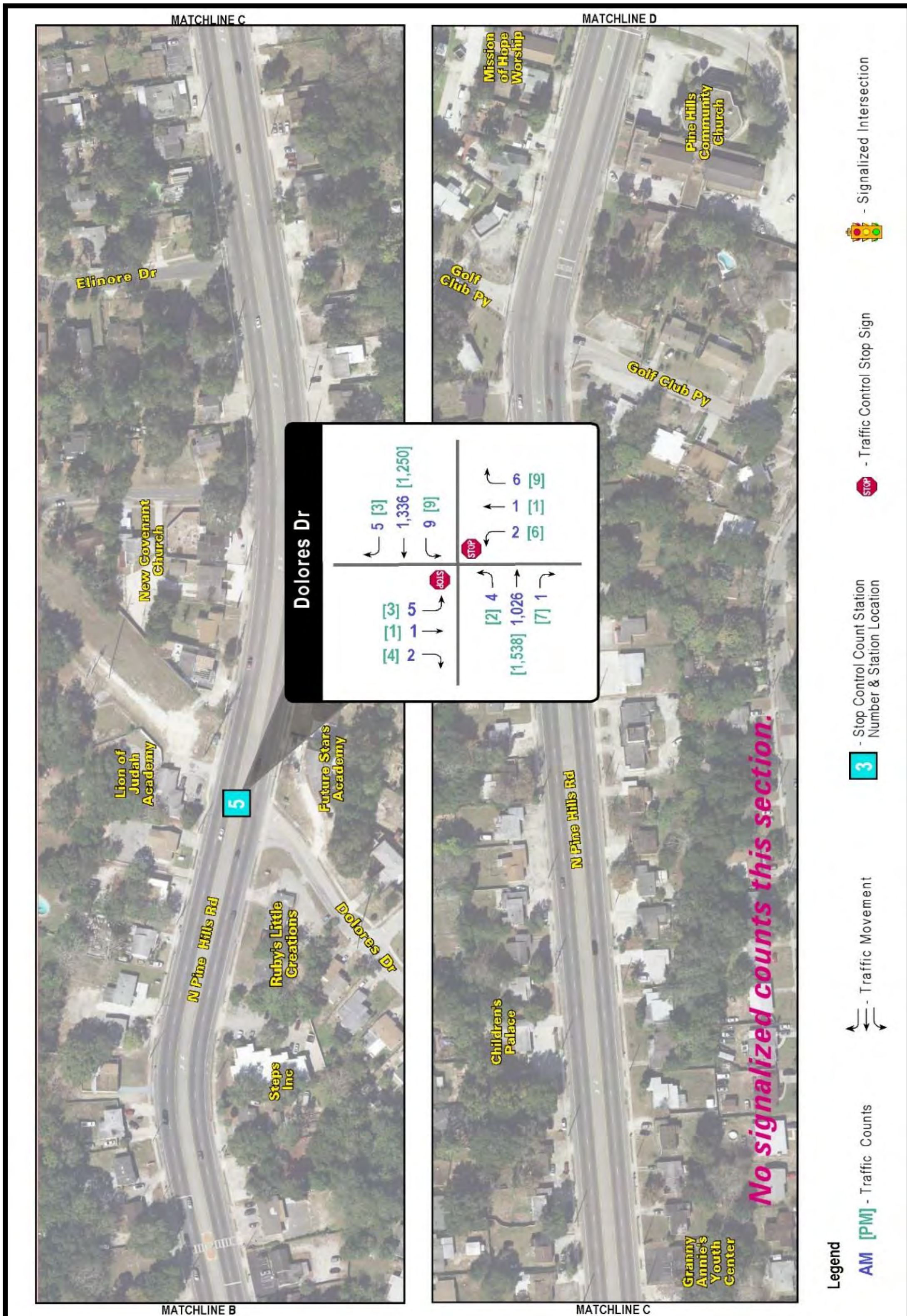


Figure F.1, continued – 2020 No-Build Turning Volumes

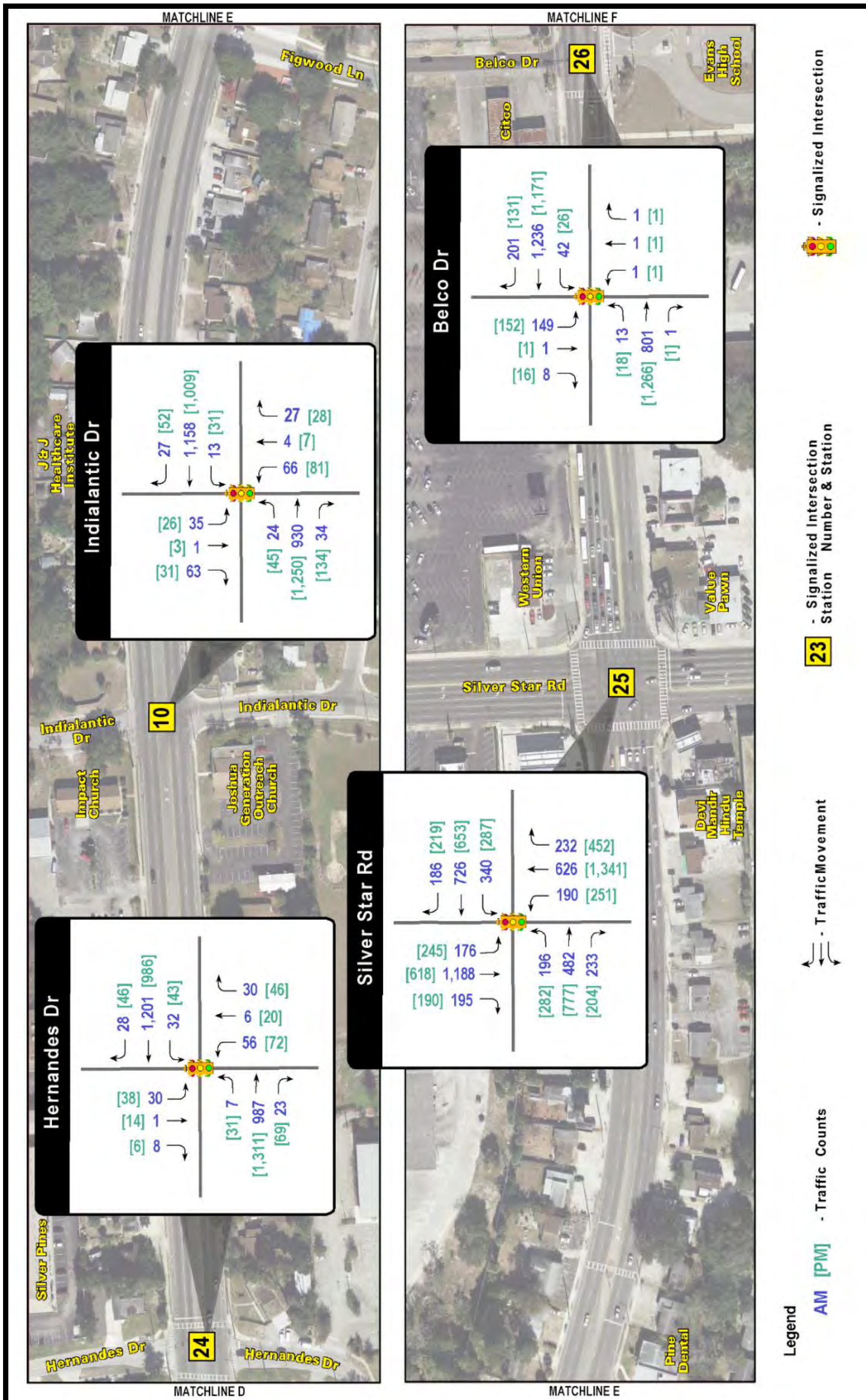


Figure F.1, continued – 2020 No-Build Turning Volumes

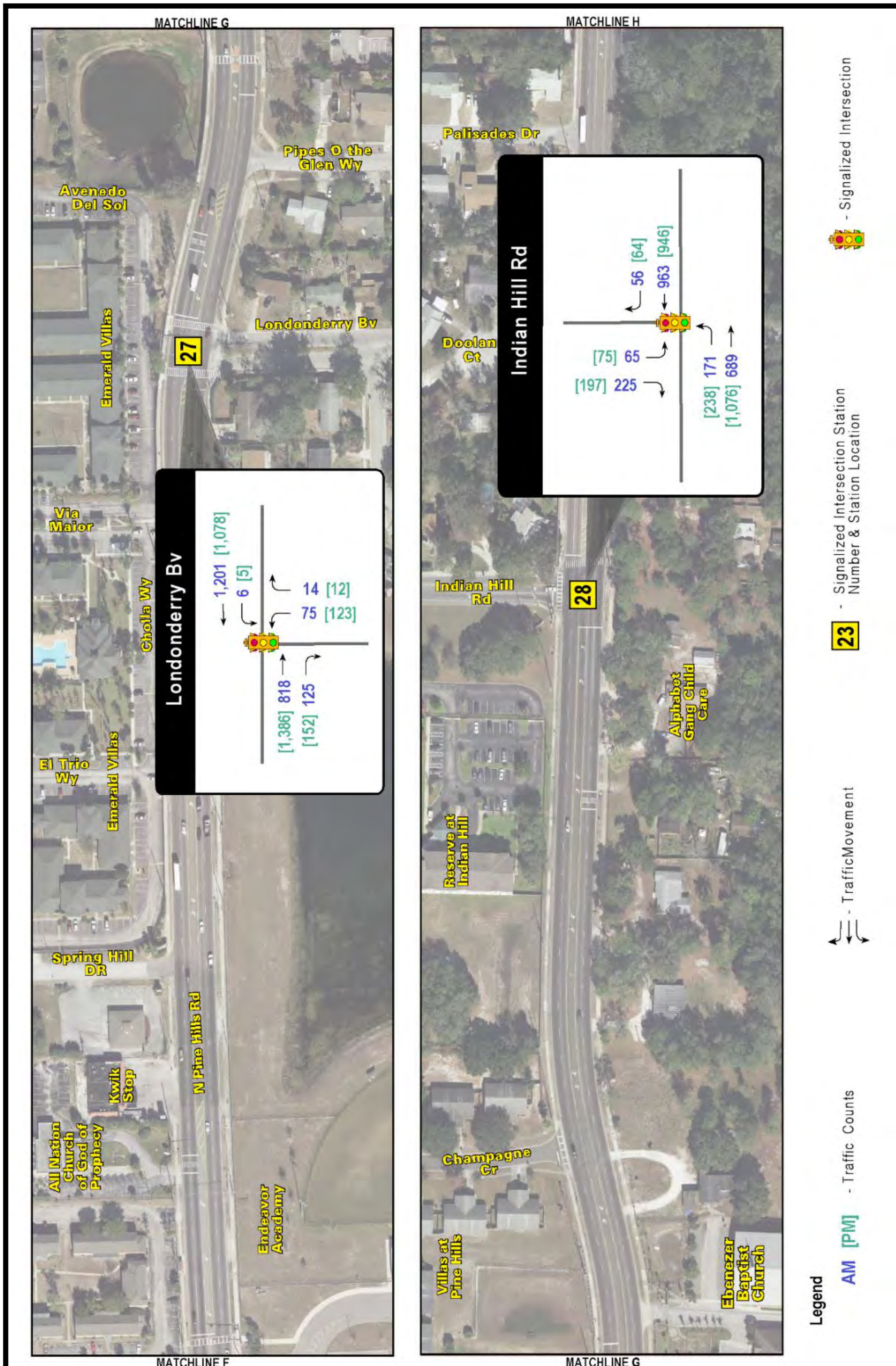


Figure F.1, continued – 2020 No-Build Turning Volumes

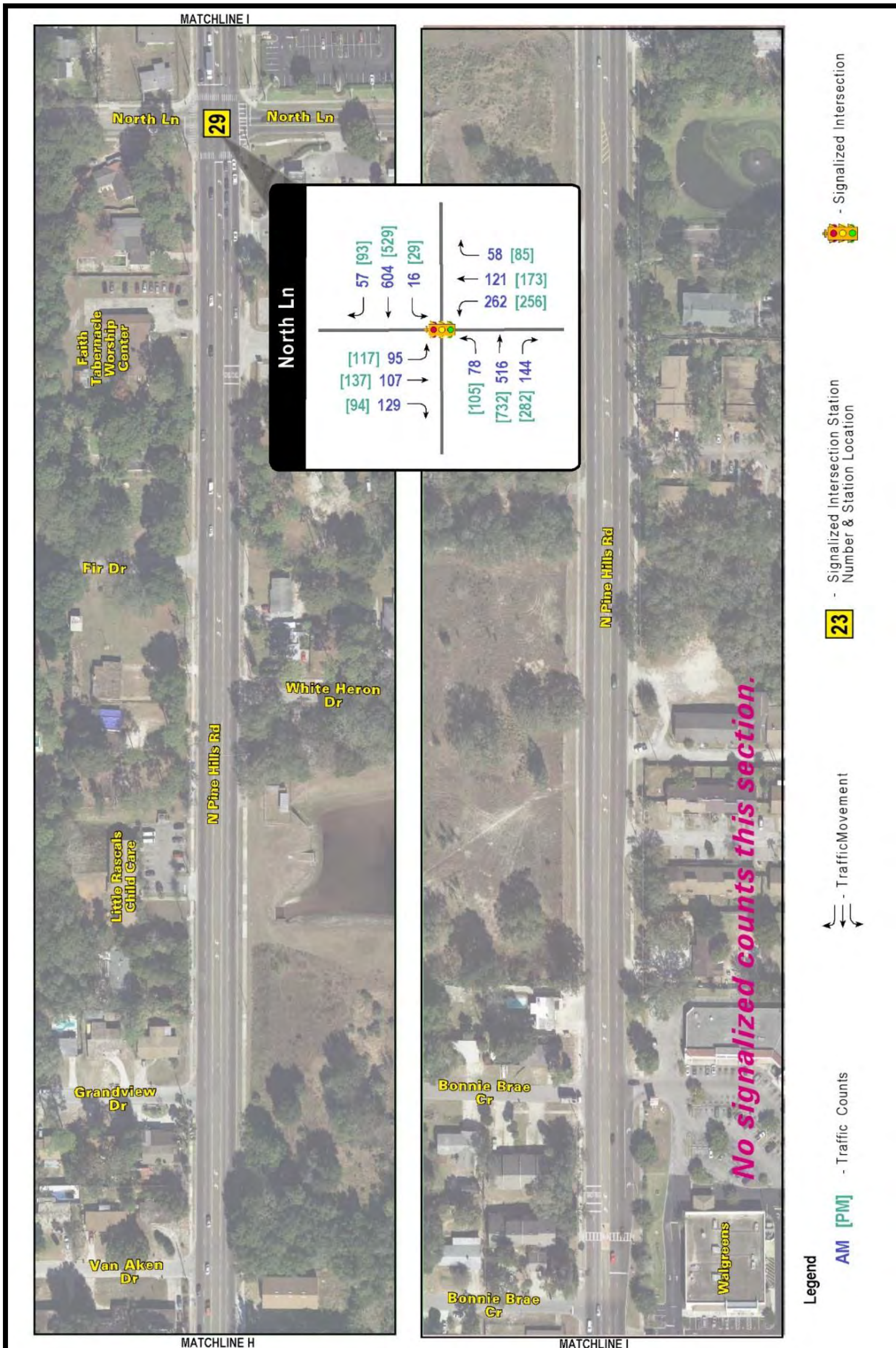


Figure F.2 – 2020 Build Turning Volumes

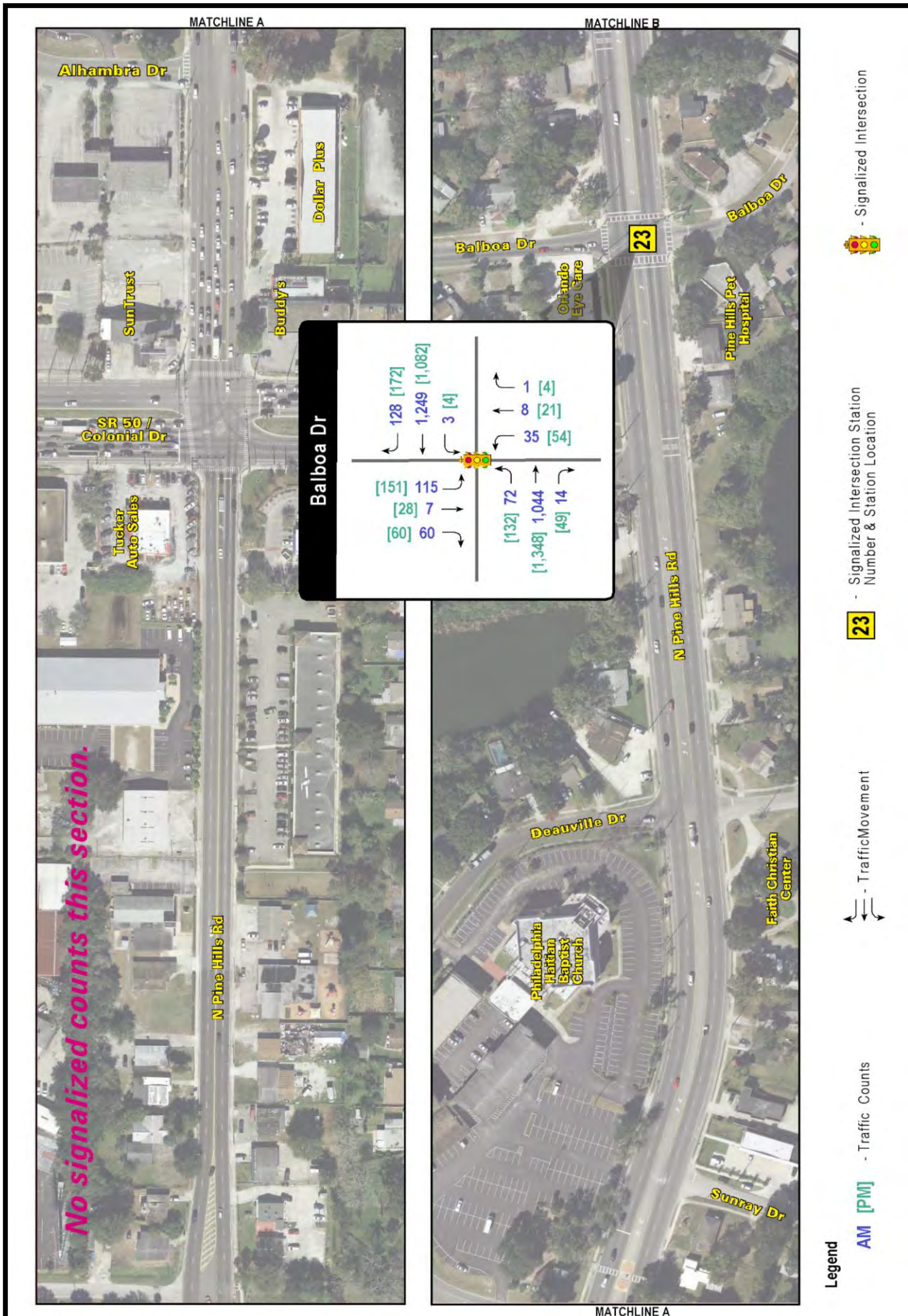


Figure F.2, continued – 2020 Build Turning Volumes

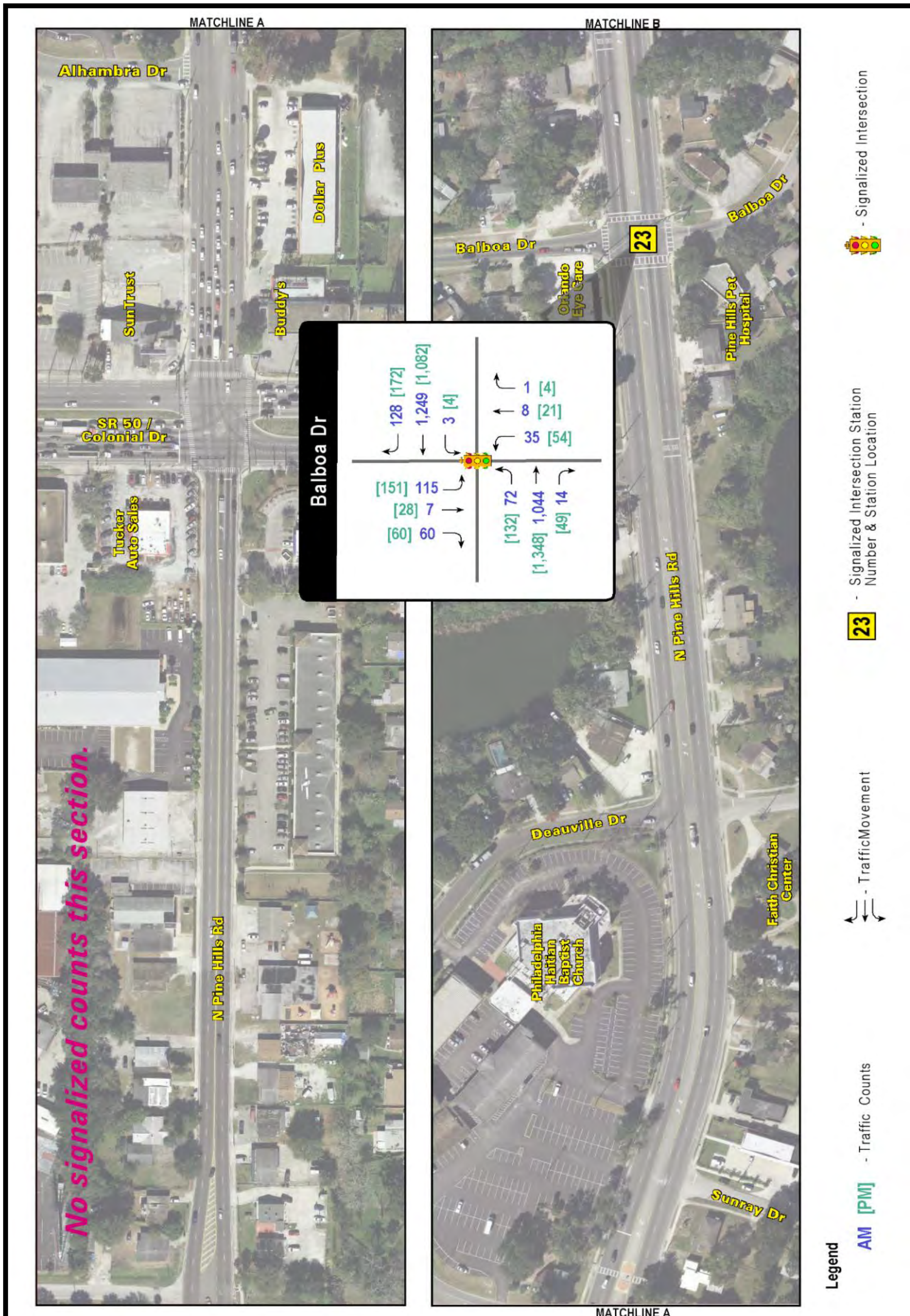


Figure F.2, continued – 2020 Build Turning Volumes

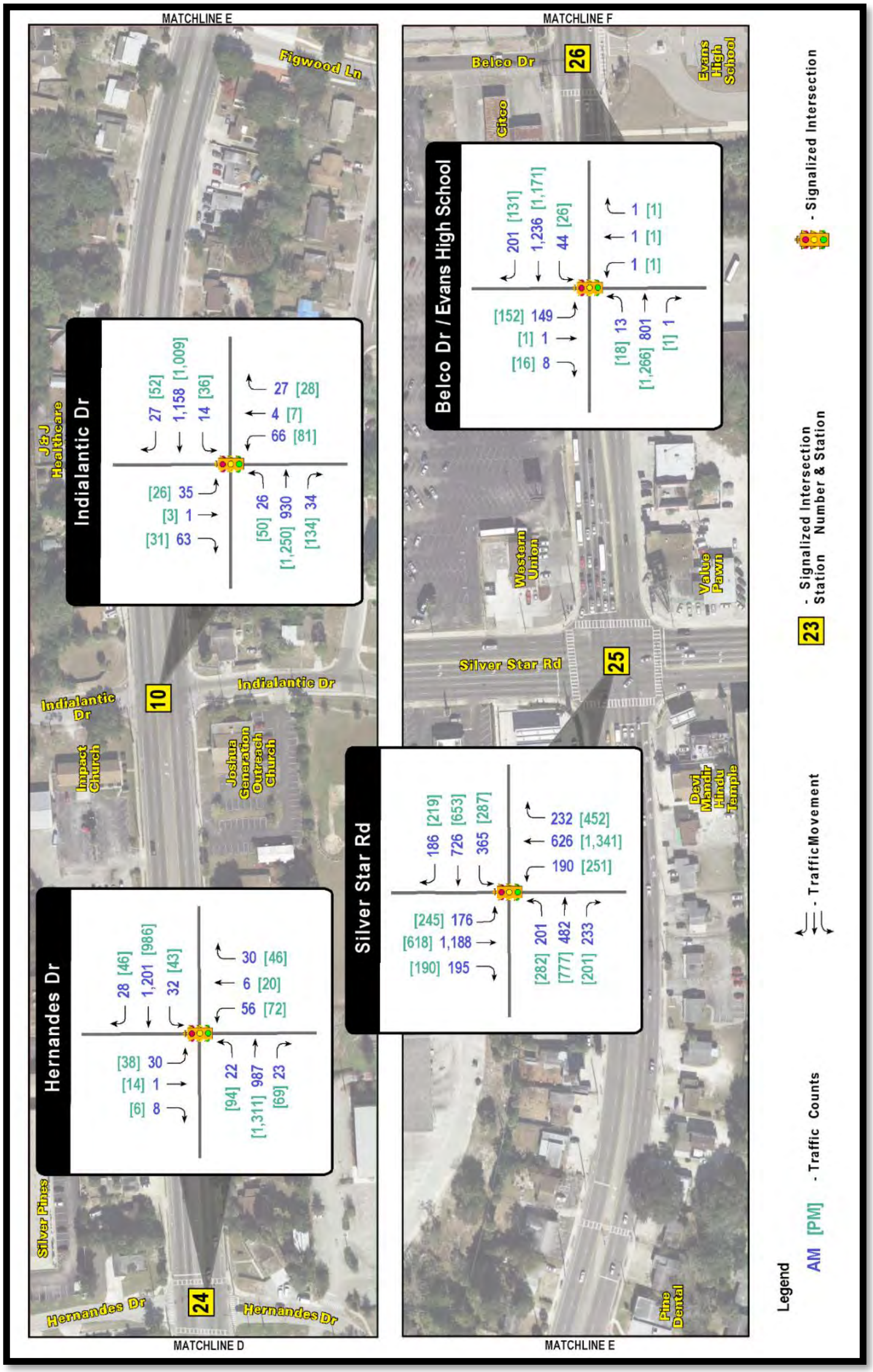


Figure F.2, continued – 2020 Build Turning Volumes

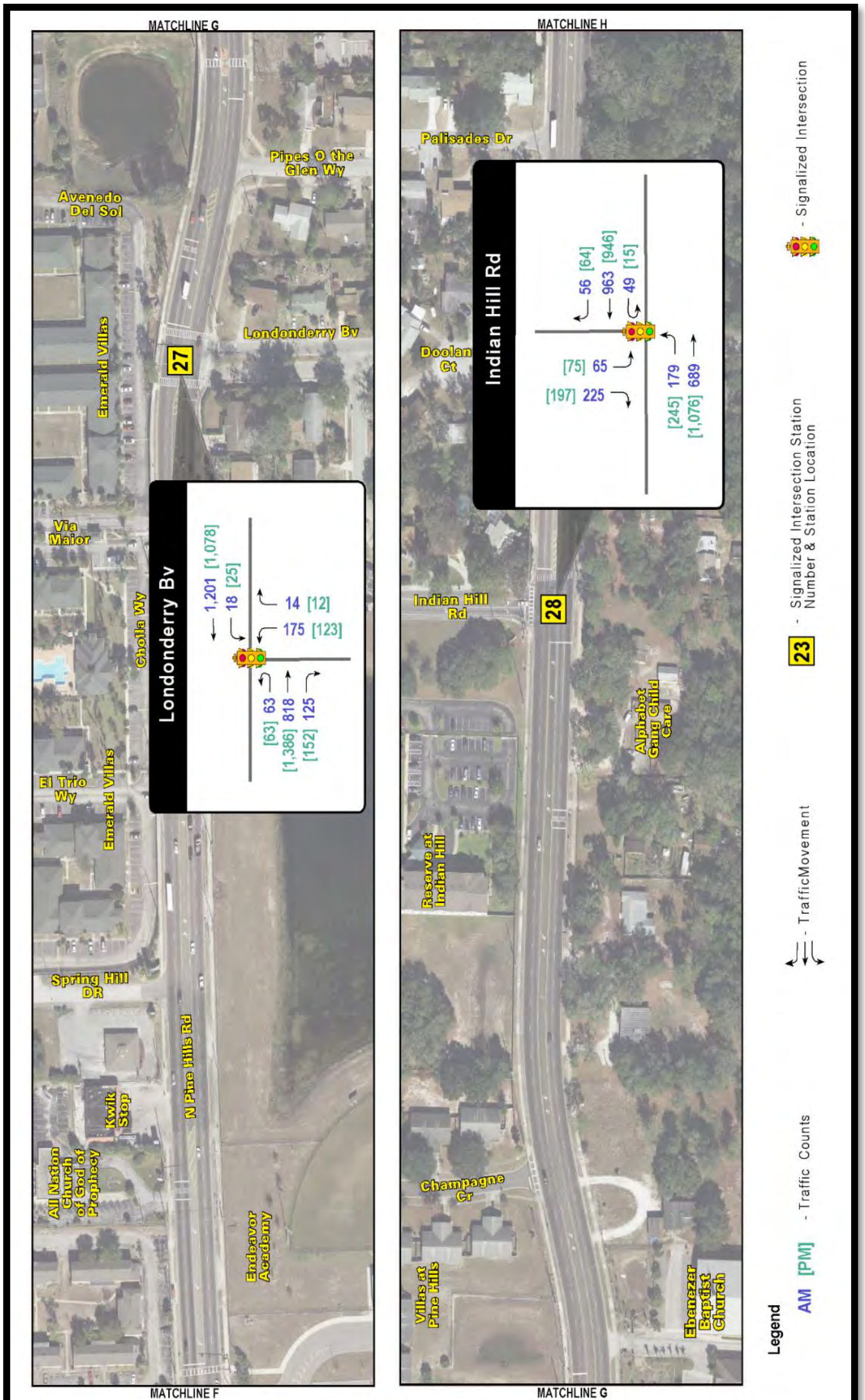


Figure F.2, continued – 2020 Build Turning Volumes

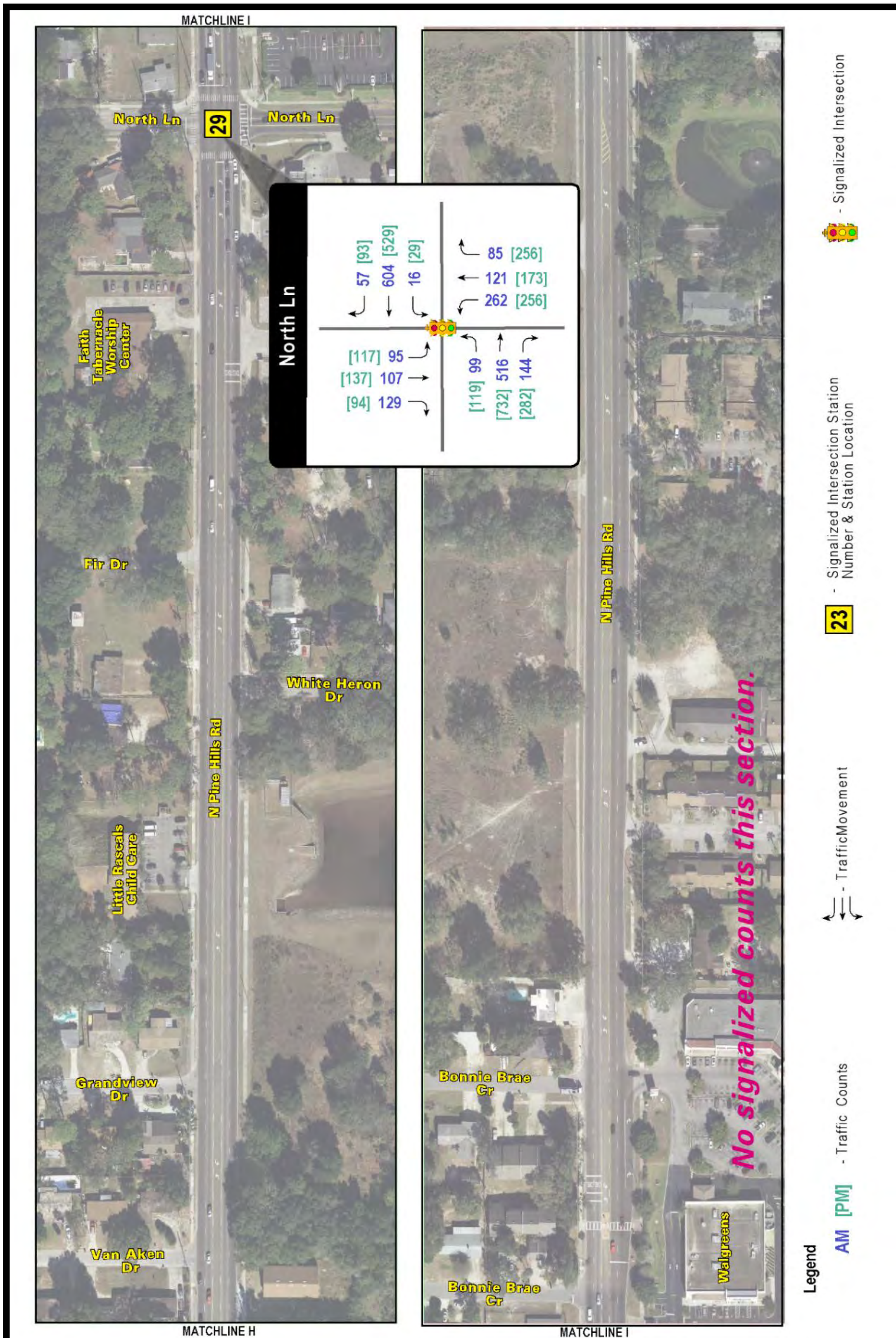


Figure F.3 – 2040 No-Build Turning Volumes

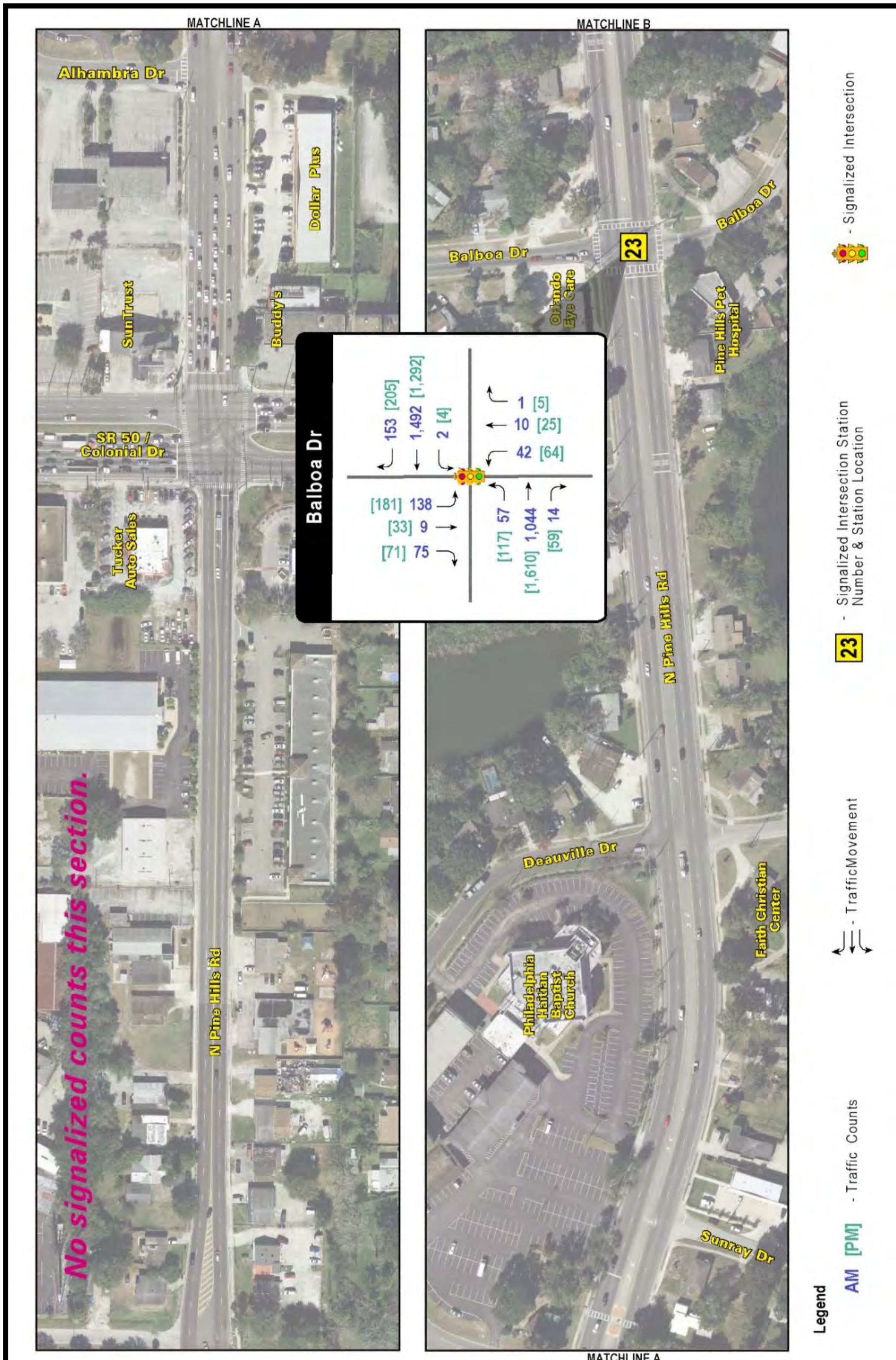


Figure F.3, continued – 2040 No-Build Turning Volumes

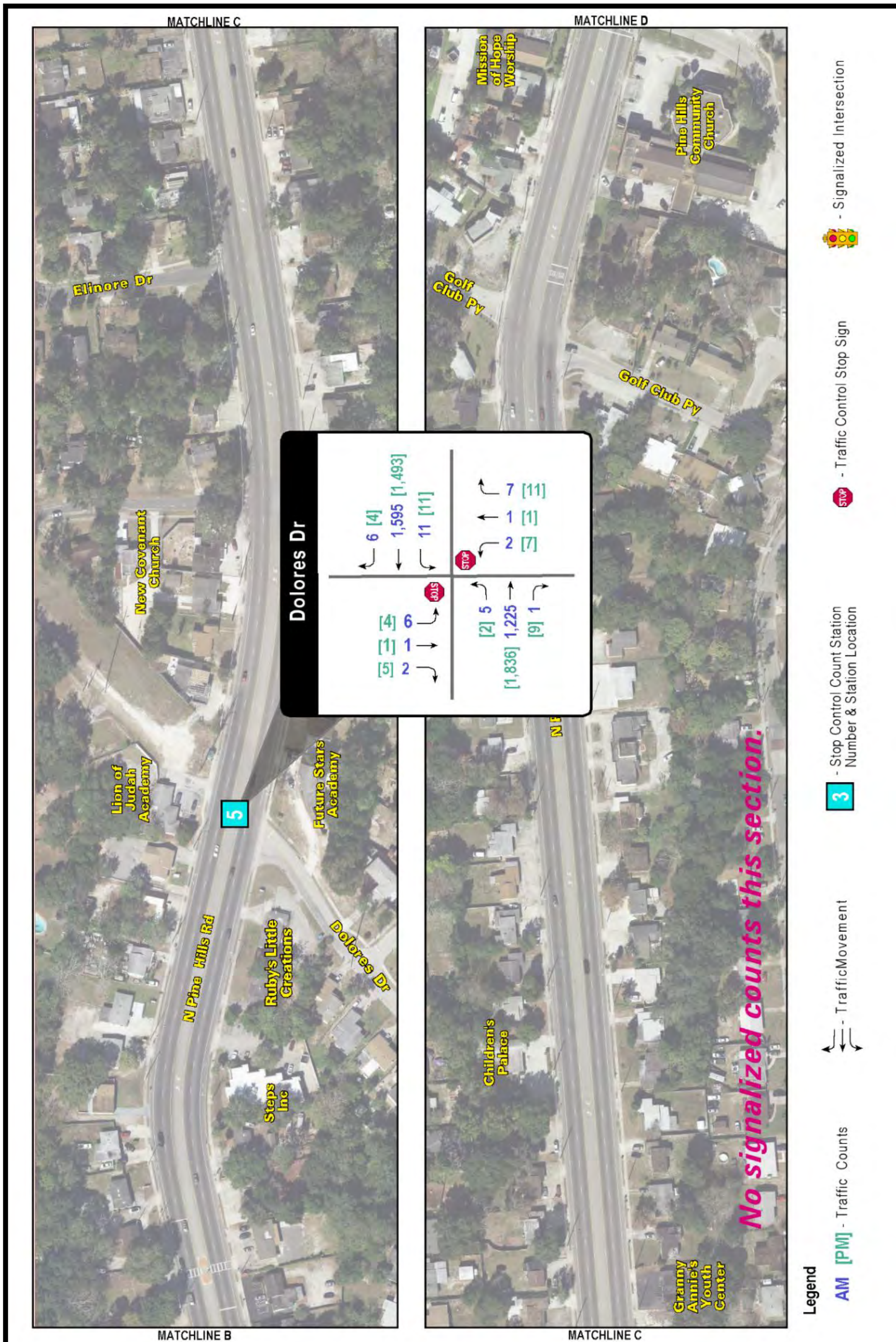


Figure F.3, continued – 2040 No-Build Turning Volumes

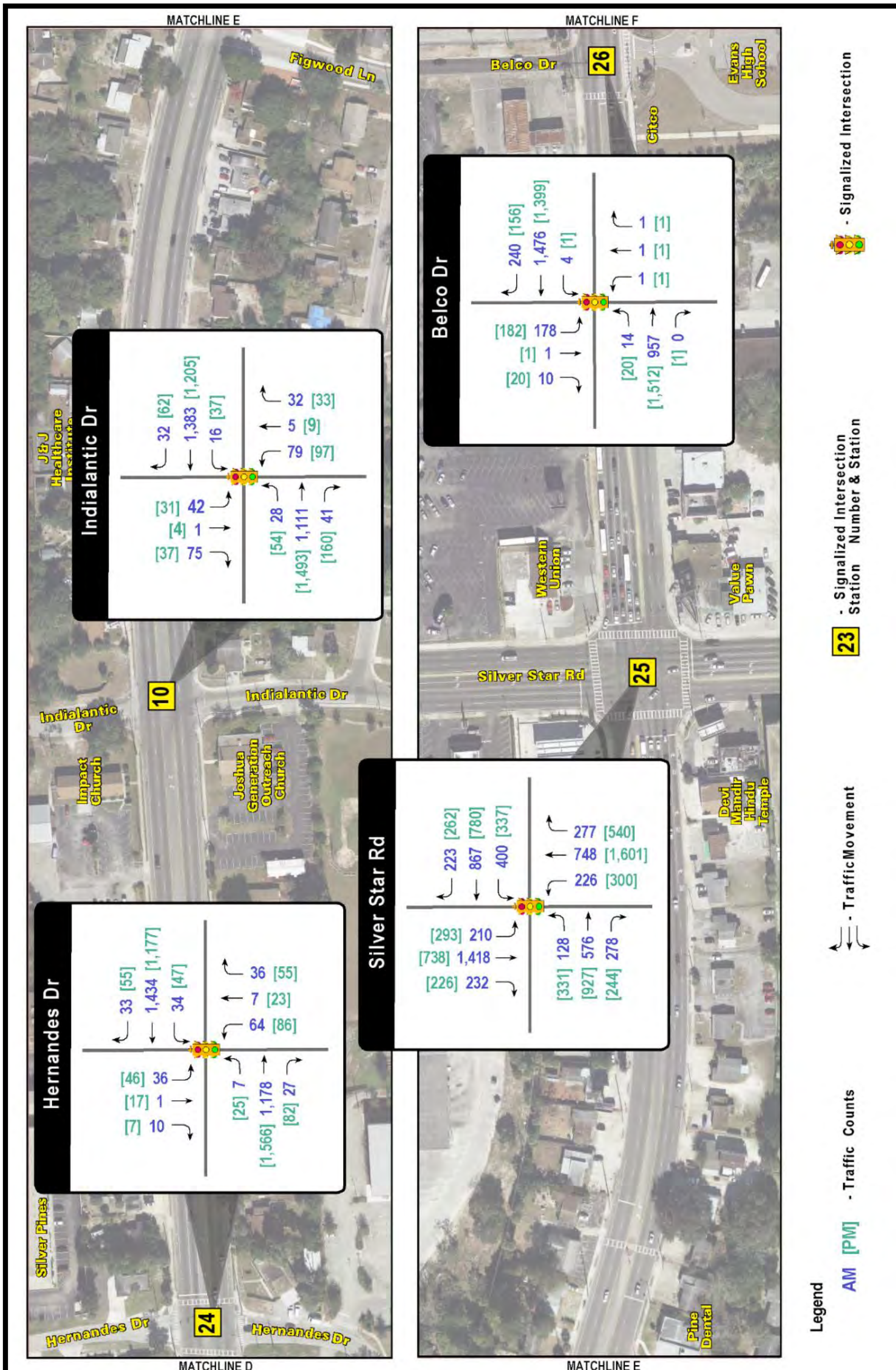


Figure F.3, continued – 2040 No-Build Turning Volumes

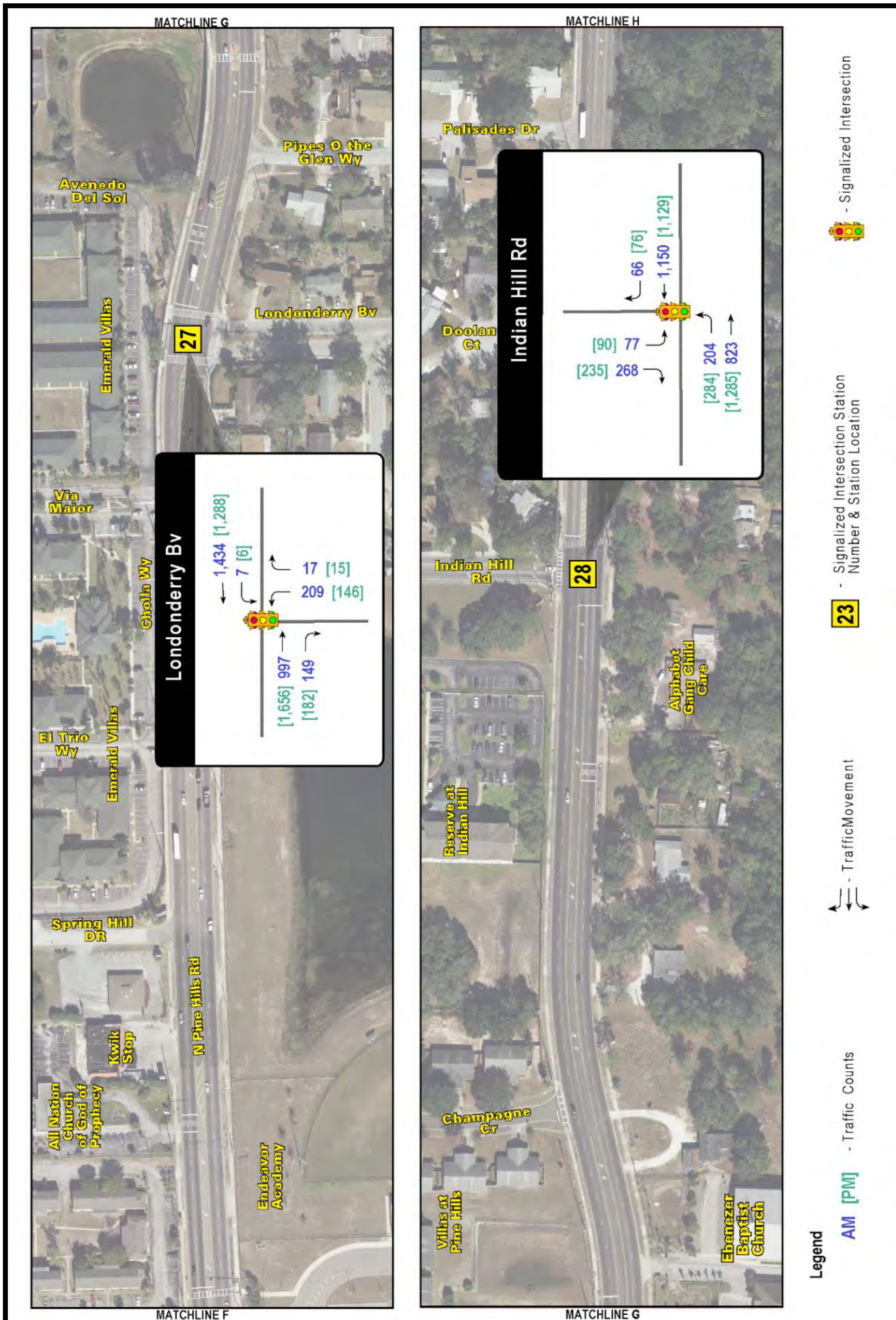


Figure F.3, continued – 2040 No-Build Turning Volumes

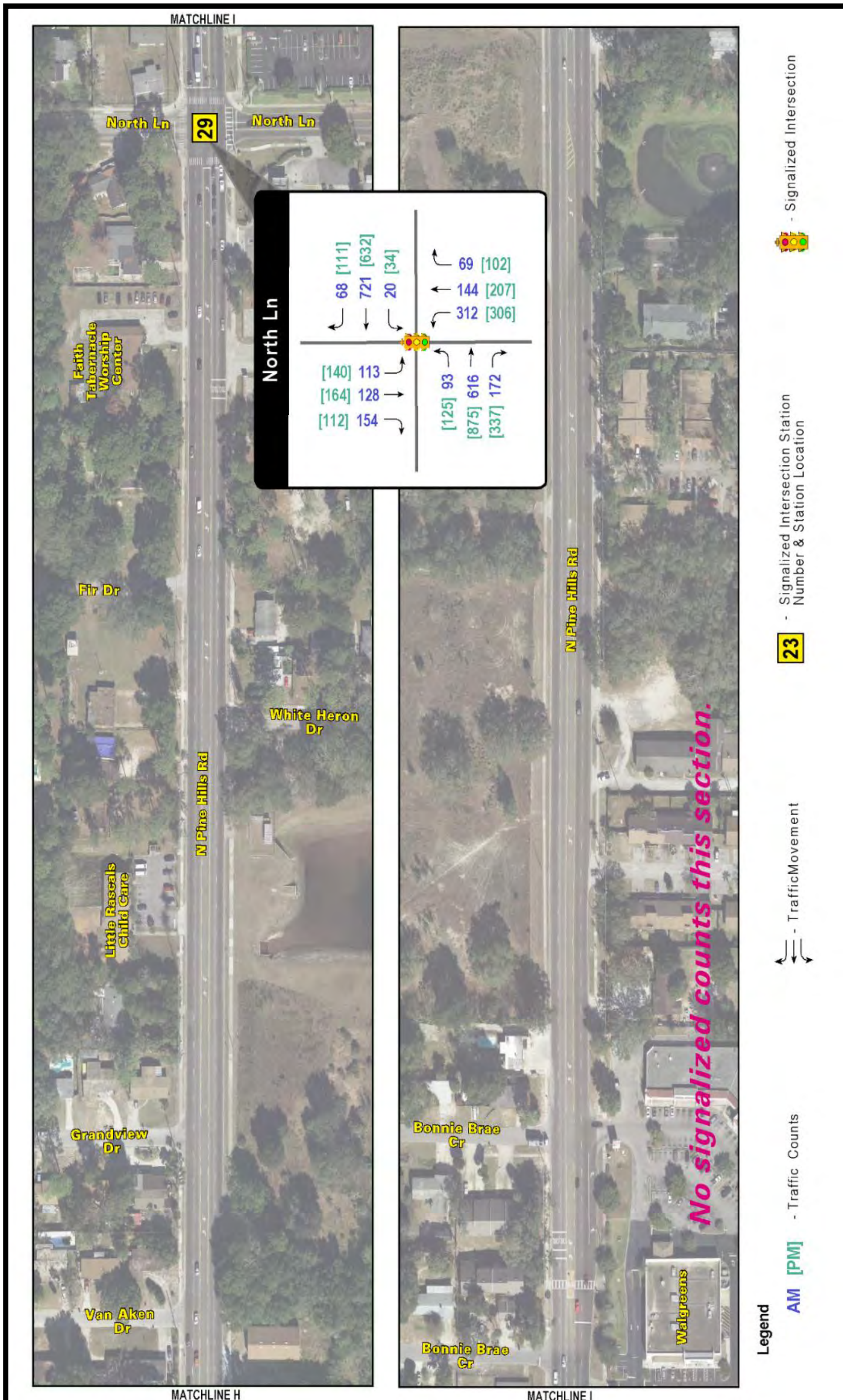


Figure F.4 – 2040 Build Turning Volumes

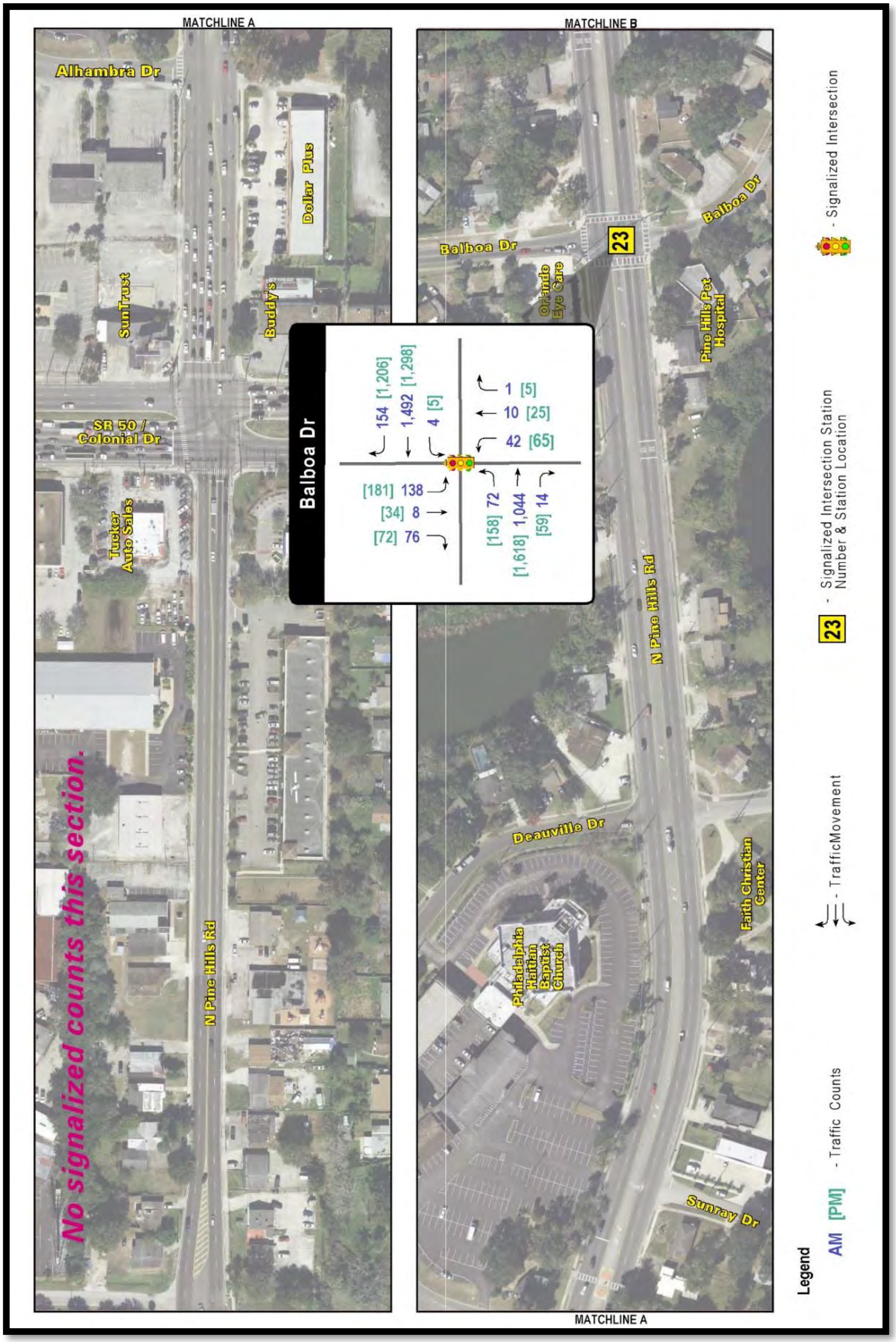


Figure F.4, continued – 2040 Build Turning Volumes

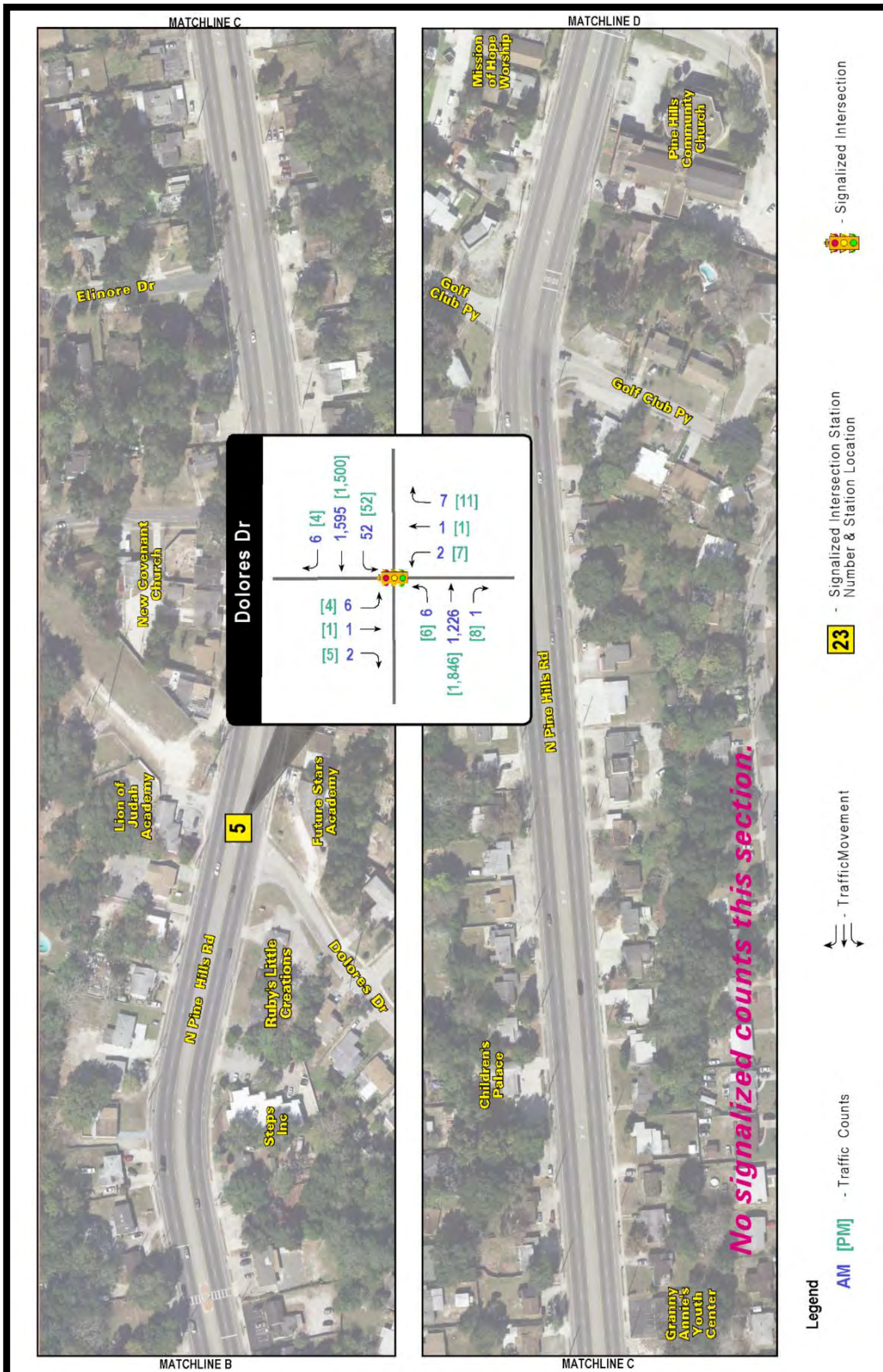


Figure F.4, continued – 2040 Build Turning Volumes

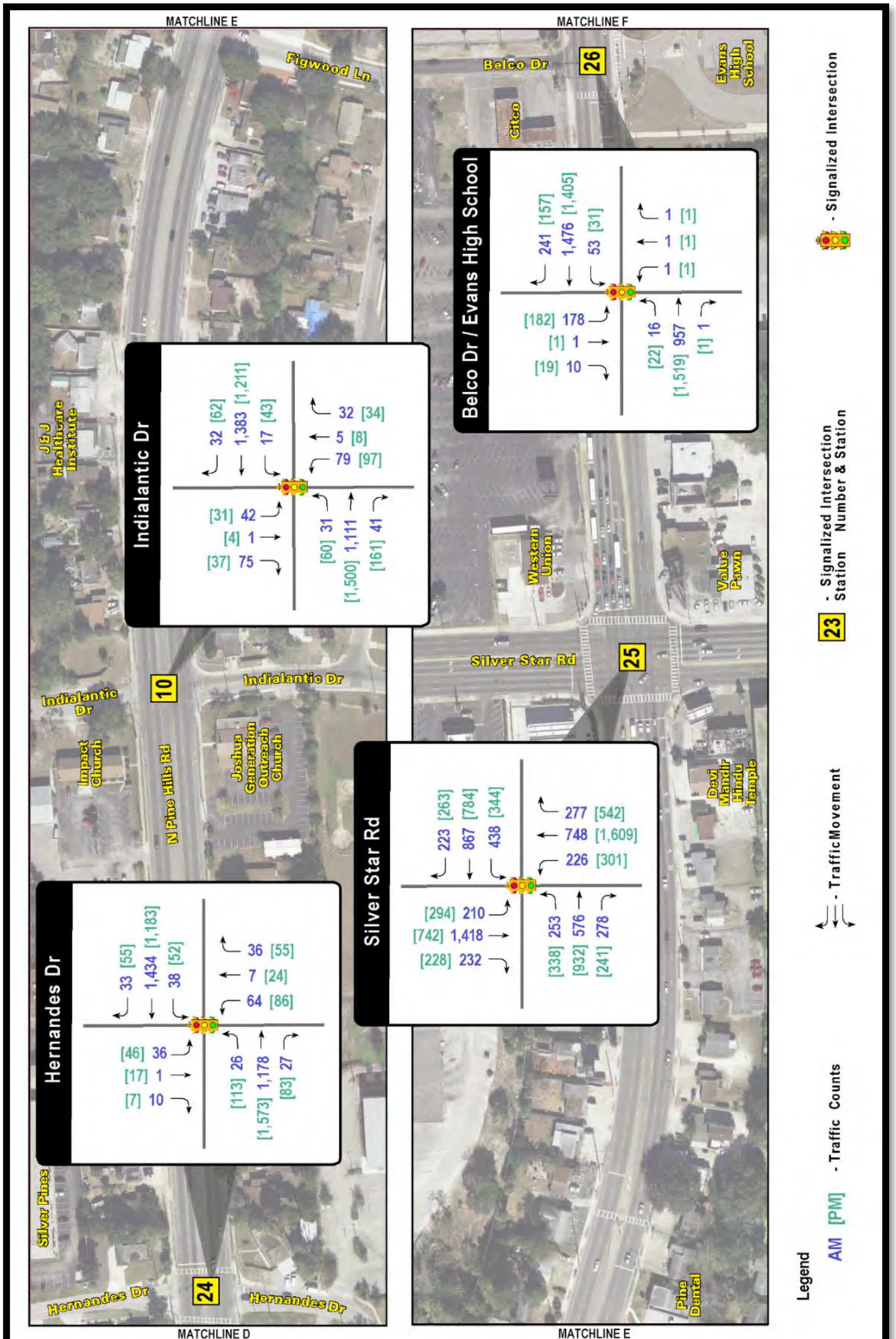


Figure F.4, continued – 2040 Build Turning Volumes

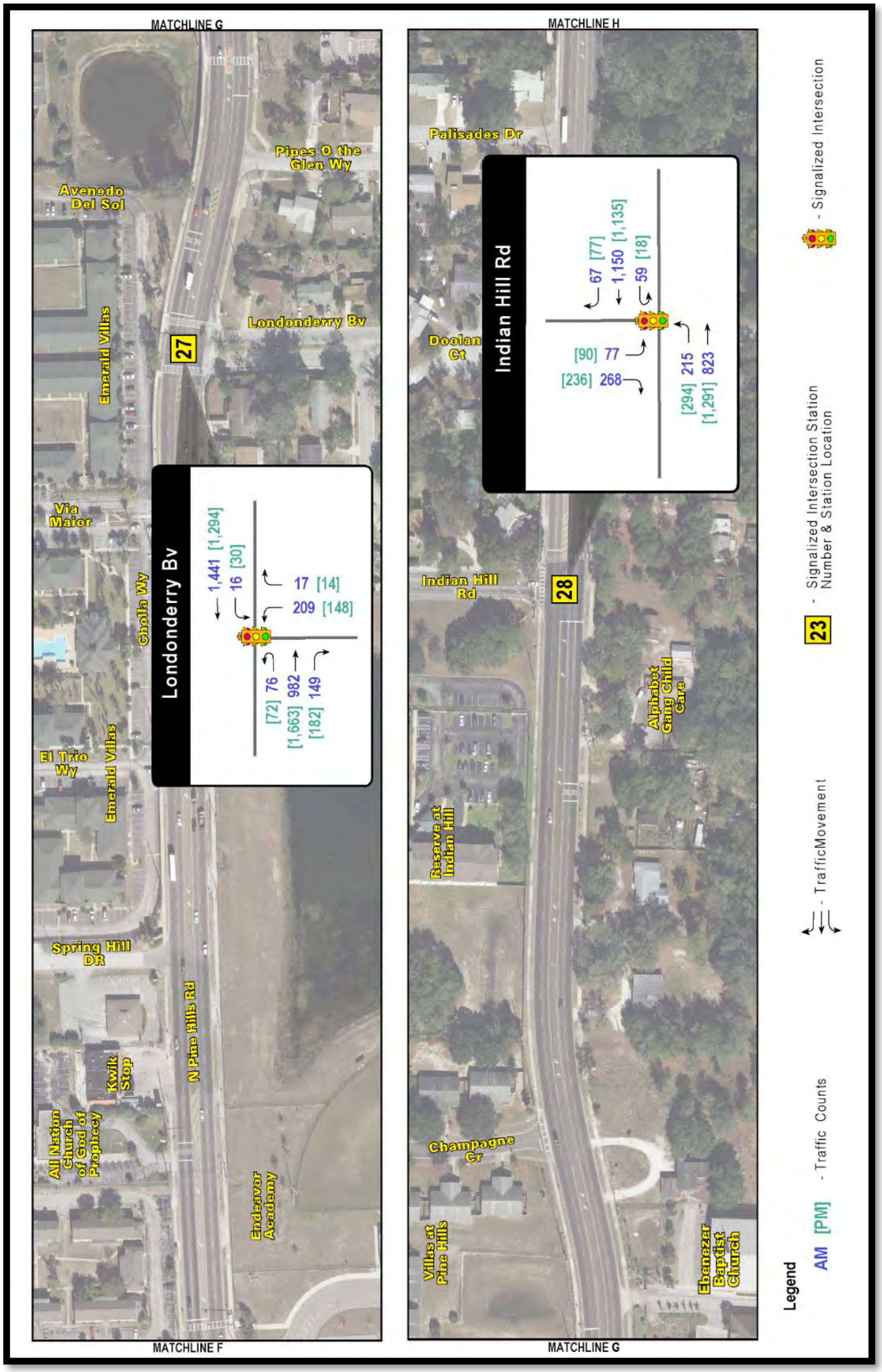


Figure F.4, continued – 2040 Build Turning Volumes

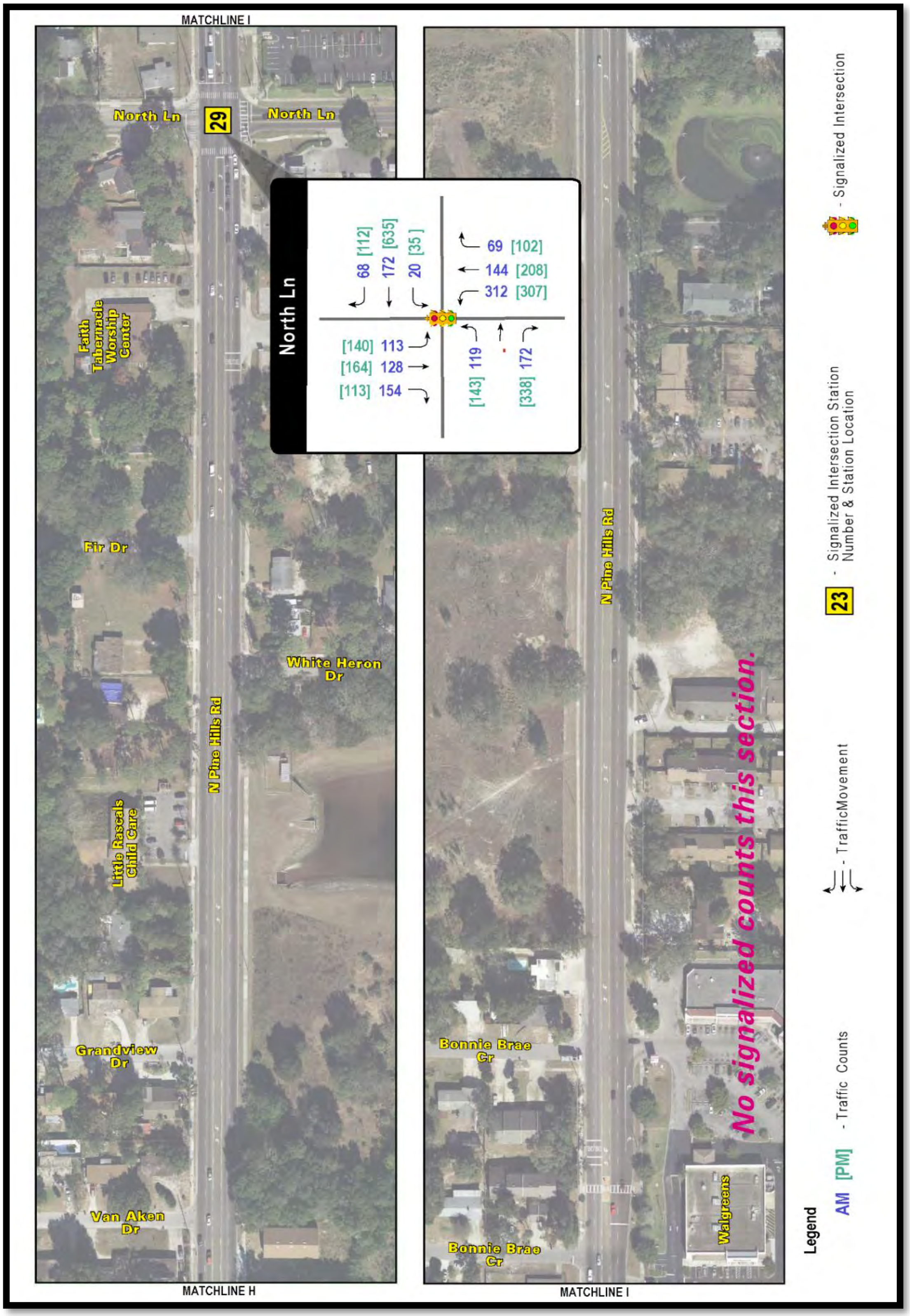


Figure F.5 – 2020 Build Turning Volumes for Via Maior

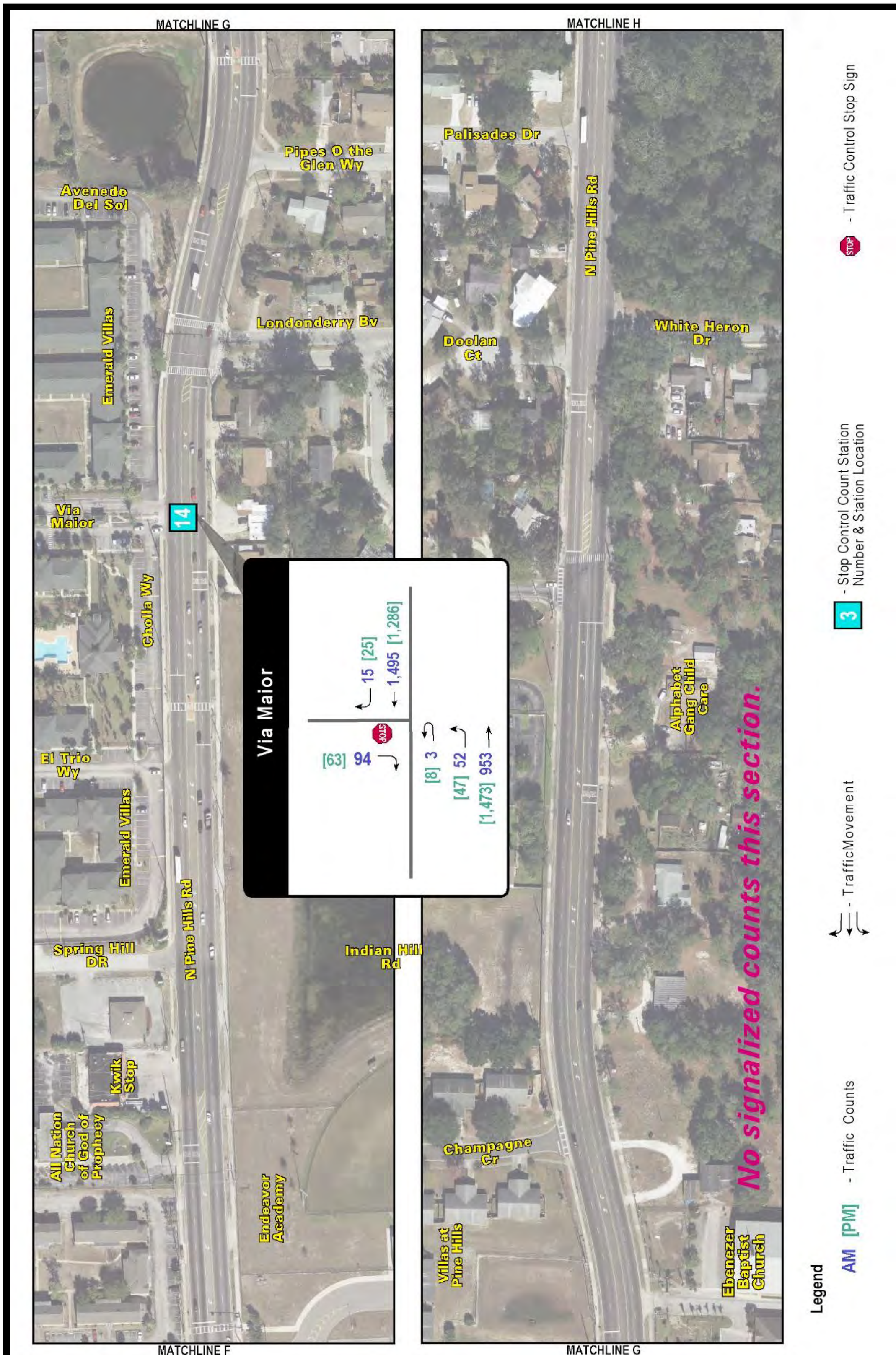
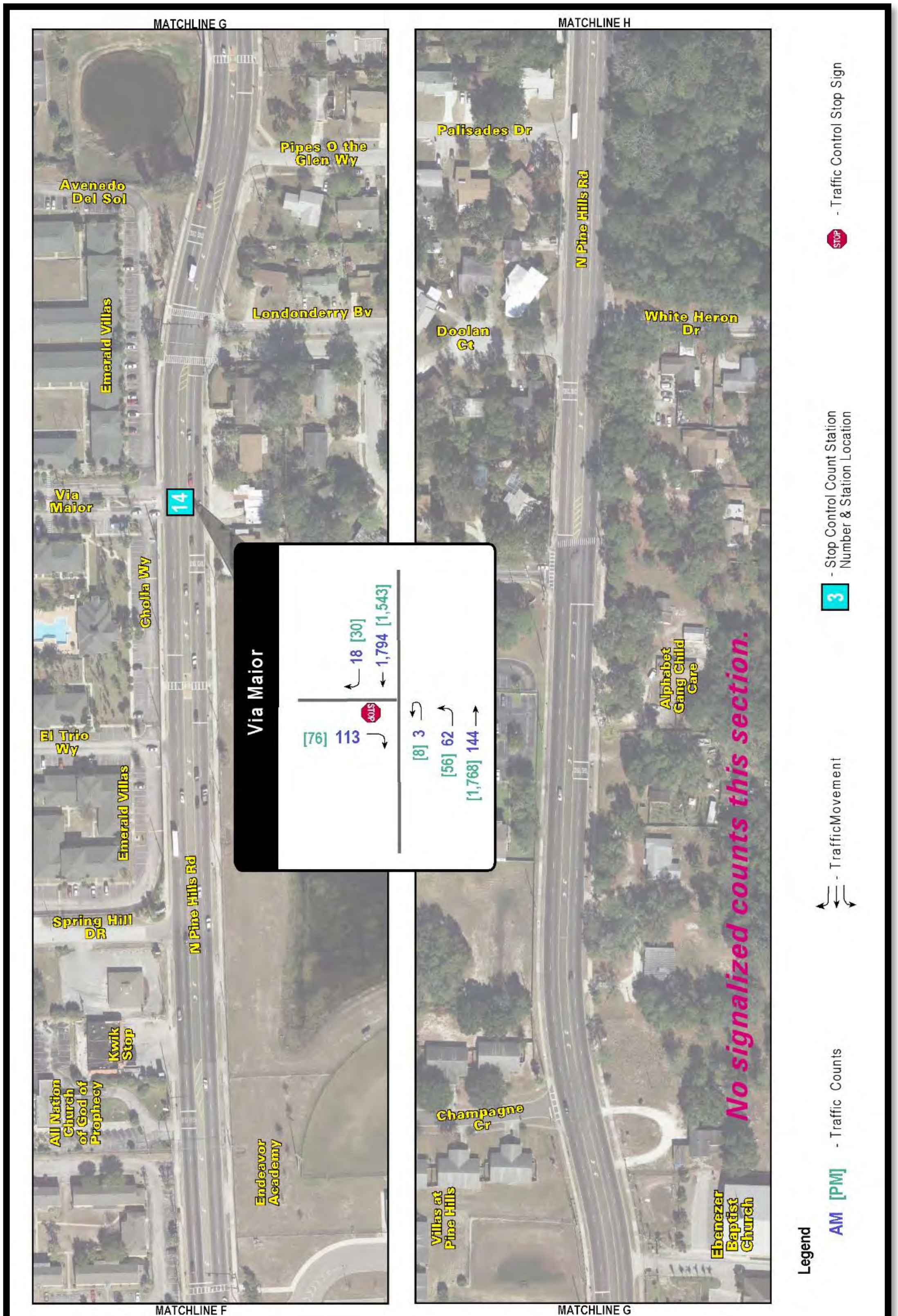


Figure F.6 – 2040 Build Turning Volumes for Via Maior



APPENDIX F

TECHNICAL MEMORANDUM 6: SAFETY IMPROVEMENT STRATEGIES REPORT

Pine Hills Road Pedestrian/Bicycle Safety Study

Safety Improvement Strategies Report

Technical Memorandum No. 6

ORANGE COUNTY GOVERNMENT FLORIDA

ORANGE COUNTY WALK•RIDE•THRIVE!

INVEST Our HOME for Life

Many Cultures, One Bright Future PINE HILLS NEIGHBORHOOD IMPROVEMENT DISTRICT

Pine Hills Road Pedestrian/Bicycle Safety Study

On behalf of Orange County Mayor Teresa Jacobs, District 2 Commissioner Bryan Nelson and District 6 Commissioner Victoria P. Siplin, Orange County is pleased to present this Technical Memorandum for Safety Improvement Strategies as part of the Pine Hills Road Pedestrian/Bicycle Safety Study. The study limits are from Colonial Drive (State Road (SR) 50) to Bonnie Brae Circle, a distance of approximately 3.6 miles.

This Pine Hills Road corridor has been identified as a high crash corridor for pedestrian and bicycle crashes. In addition, there are a variety of land uses along the corridor including multiple schools, residential, retail and office land uses, as well as heavily-used transit routes, which result in a truly multi-modal corridor.

The Pine Hills Road Pedestrian/Bicycle Safety Study is a comprehensive review of the Pine Hills Road corridor which will investigate various measures to provide a safe integration of walkers and bicyclists with other modes of transportation. This study is a result of Mayor Jacobs' "Walk-Ride-Thrive!" and "INVEST in Our Home for Life" initiatives to make Orange County roads safer for all pedestrians and bicyclists.

Honorable Teresa Jacobs
Orange County Mayor

Bryan Nelson
Orange County District 2 Commissioner

Victoria P. Siplin
Orange County District 6 Commissioner

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1.0 Introduction

In January 2017, Orange County initiated a Pedestrian/Bicycle Safety Study to develop safety alternatives and strategies for pedestrian/bicycle mobility along Pine Hills Road between Colonial Drive (SR 50) and Bonnie Brae Circle, with special emphasis at the Silver Star Road (SR 438) intersection. This report presents recommended safety improvement strategies, costs, and an implementation plan to improve safety for pedestrians and bicyclists traveling along Pine Hills Road.

This report evaluates alternative strategies to improve safety within the Pine Hills Road corridor. Provided below is a brief summary of each chapter of the report:

2. **Overview of Safety Measures**: This chapter presents potential safety measures to improve pedestrian and bicycle safety along the Pine Hills Road corridor.
3. **Overview of the No Build and Build Alternatives**: This chapter discusses the differences between the Build and No Build alternatives. The No Build Alternative essentially consists of existing conditions including current programmed improvements. The Build Alternative consists of various combinations of safety measures to improve pedestrian and bicycle safety along the Pine Hills Road corridor.
4. **Operational Analysis Comparison**: This chapter presents a summary of the operational analyses and future conditions analyses for automobiles, pedestrians, and bicycles along the corridor.
5. **Screening of Candidate Recommendations**: This chapter screens the identified alternatives based on how well they meet the project purpose and objectives.
6. **Preliminary Cost Estimates**: This chapter summarizes the methodology and assumptions used in preparing the preliminary cost estimate.
7. **Benefit/Cost Analysis**: This chapter discusses the benefit/cost analysis of the proposed safety measures. For each safety measure, benefits are quantified by estimated reductions in crashes in dollars. Cost calculations include provisions for estimated construction and maintenance costs for the respective safety measure quantified in dollars. The benefit/cost ratio provides a widely recognized approach in evaluating and comparing the relative cost-effectiveness of each proposed safety measure.
8. **Recommended Improvement Strategies**: This chapter provides recommended safety improvement strategies for the Pine Hills Road corridor.

2.0 Overview of Safety Measures

The following potential safety measures have been proposed to address crash history along Pine Hills Road and improve pedestrian and bicycle safety along this roadway. These measures are not only expected to reduce pedestrian and bicycle crashes, but they can also result in corollary benefits by reducing vehicular accidents thereby achieving overall safety improvements for the corridor.

- **Lighting**
  - The Pine Hills Road corridor experienced a high incidence of crashes at night and the luminosity survey indicated the existing lighting does not meet FDOT standards. Accordingly, lighting improvements are proposed consisting of new LED fixtures to increase the visibility of pedestrians and bicyclists as they travel along the Pine Hills Road corridor. Improved lighting can also improve visibility for vehicular traffic as well. As a side benefit, lighting can provide pedestrians and bicyclists with a greater sense of security.
- **Raised Medians**
  - The access management plan developed under this study recommends replacing the current five-lane undivided roadway with a four-lane section with a raised median. Raised medians can improve safety by reducing the number of potential conflict points at driveways and intersections. In addition, raised medians provide the opportunity for refuge at midblock crossings or intersections, thereby giving pedestrians and bicyclists a safe place to rest as they cross the street and wait for gaps in traffic.
- **Landscaping**
  - In addition to providing aesthetic improvements along the corridor and creating a sense of place, landscaping can serve to guide pedestrian and bicycle movements to designated crosswalks or intersections to improve safety. Orange County currently provides standard, low maintenance landscaping on their projects which includes sod and small trees that do not require irrigation.
  - As an option, enhanced landscaping consisting of scrubs and ground cover can also be provided to reinforce pedestrian crossings at designated or desirable locations while providing a higher level of aesthetics. However, the cost of materials, installation, and maintenance costs are typically higher with this option.
- **Pedestrian Fencing**
  - Pedestrian fencing can be installed within a raised median that can serve to guide pedestrian and bicycle movements to designated crosswalks. Pedestrian fencing is recommended to be installed in accordance with FDOT Standard Index D804.
- **Lane Width Reduction**
  - The installation of raised medians will reduce the width of the travel lanes in order to avoid reconstructing the existing outside curbs. One benefit of decreasing the width of travel lanes is the crossing distances for pedestrians will be shortened as well.
- **Pedestrian Signals**
  - The implementation of pedestrian signals, such as Rectangular Rapid Flashing Beacons (RRFB's) or High Intensity Activated Crosswalk (HAWK), encourages pedestrians/bicyclists to use the crosswalk instead of attempting to cross at other non-designated locations. In addition, RRFB's or HAWK's can increase motorist awareness of pedestrian/bicyclist movements at marked crosswalks.
- **Transit Stop Relocation**

  - By relocating transit stops or shelters close to marked crosswalks or intersections, pedestrians/bicyclists are more incentivized to cross at marked locations, thereby improving safety.

- **Silver Star Road/Pine Hills Road Intersection Improvements**
  - The curb returns at the Silver Star Road/Pine Hills Road intersection will be reconstructed where possible to provide for shorter crossing distances for pedestrians. In addition, the crosswalks will be rebuilt and widened to with high intensity pavement markings.
- **Multi-Use Path**
  - Multi-use paths can improve safety by providing an opportunity for safe pedestrian or bicycle travel in a separate area away from vehicular traffic. Multi-use paths are particularly beneficial when bicycle lanes are not present on the roadway and can also accommodate children or some bicyclists that may not be comfortable riding on the roadway.
- **Pedestrian/Bicyclist Education Programs**
  - Pedestrian/bicyclist education programs provide greater awareness and understanding to residents about how to walk and ride safely in their community. A number of crashes had “Dart/Dash” (pedestrians darting or dashing across the roadway) movements as a contributing factor, and education programs especially for children can potentially reinforce better crossing behavior.

3.0 Overview of Alternatives

This section analyzes two alternatives considered for the Pine Hills Road corridor as described below:

- No Build Alternative – a "do nothing" approach where only limited changes will be made to the existing roadway section consisting only those that are currently programmed. Under this alternative, the current crash history can be expected to continue.
- Build Alternative – includes various safety measures such as including a raised median meeting access management changes, dedicated left turn lanes, multi-use path, landscaping, and other improvements.

3.1 No Build Alternative

The No Build Alternative reflects the continuation of existing pedestrian, bicycle, traffic, and transit operations along Pine Hills Road through 2040 with little changes other than programmed transportation infrastructure and service improvements as identified in *Technical Memorandum No. 2—The Evaluation of Existing Plans and Studies*. One such planned program are new lighting improvements between Silver Star Road and North Lane. For the most part, the No Build Alternative will closely reflect the existing physical configuration of Pine Hills Road, as illustrated in the typical sections displayed in **Figures 3.1** and **3.2**.

Figure 3.1: No Build Alternative Typical Section: Colonial Drive to Silver Star Road

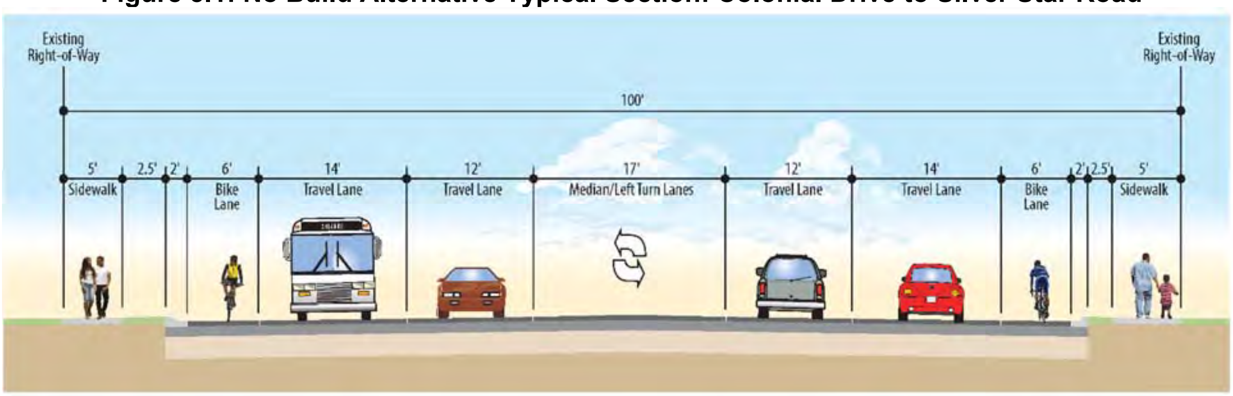
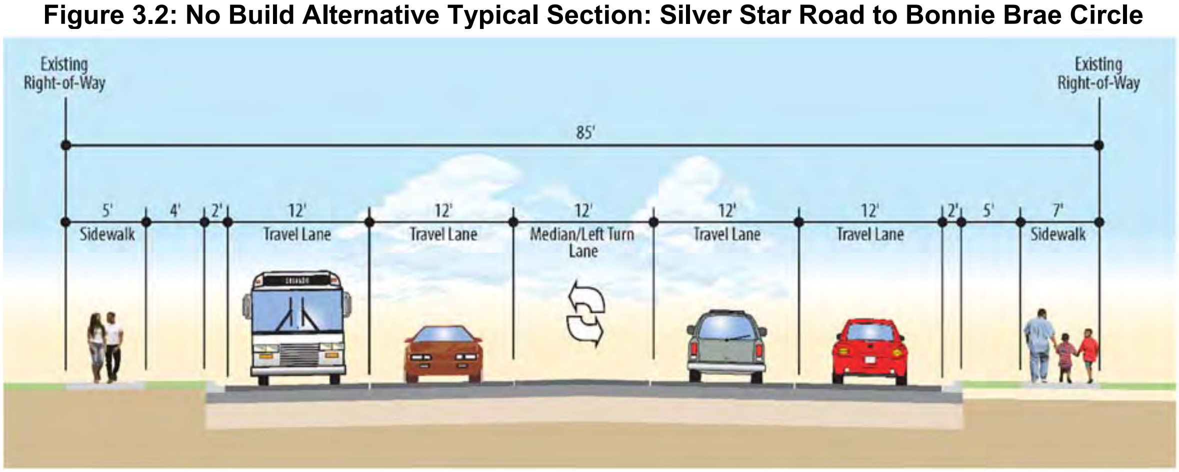


Figure 3.2: No Build Alternative Typical Section: Silver Star Road to Bonnie Brae Circle

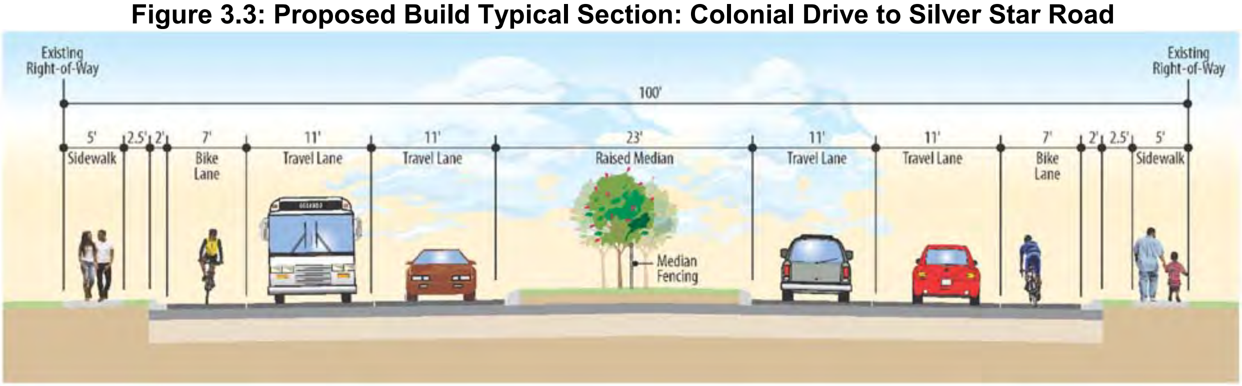


3.2 Build Alternative

The Build Alternative incorporates the application of several safety measures along the Pine Hills Road corridor as well as the Pine Hills Road/Silver Star Road intersection. Figures 3.3 and 3.4 illustrate the proposed typical sections for the Build Alternative from Colonial Drive (SR 50) to Silver Star Road (SR 438), and from Silver Star Road (SR 438) to Bonnie Brae Circle, respectively

An access management review (see *Technical Memorandum No. 4 – Access Management)* was performed which recommended a raised median could be expected to likely reduce potential conflict points with a corresponding reduction in crashes and improvement in both pedestrian and vehicular safety. The above report also identified appropriate intersection treatments along the Pine Hills Trail corridor. These median improvements and intersection treatments form the basis of the Build Alternative and are summarized further in the following paragraphs and shown in **Appendix A.**

Figure 3.3: Proposed Build Typical Section: Colonial Drive to Silver Star Road

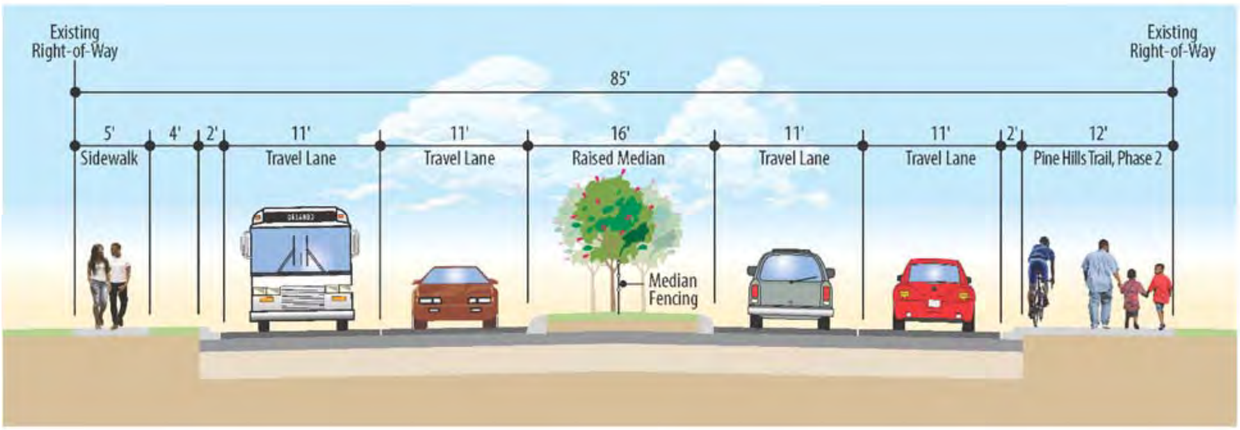


South Segment – Colonial Drive (SR 50) to Silver Star Road (SR 438)

- Provide following intersection improvements:
    - Alhambra Drive - Provide directional median opening
    - Deauville Drive – Provide full median opening
    - Balboa Drive – Provide full median opening
    - Dolores Drive – Provide full median opening with new traffic signals for future Pine Hills Trail Extension
        - Add pedestrian crosswalks on north and south legs
    - Elinore Drive - Provide full median opening
    - Ferdinand Drive - Provide full median opening
    - Hernandes Drive – Provide full median opening with
    - Indialantic Drive – Provide full median opening with new traffic signals
        - Add pedestrian crosswalks on all four legs
    - Figwood Lane – Provide full median opening
    - Silver Star Road – Reconstruct curb returns and add high intensity crosswalks
- Construct a 23-foot raised median with landscaping, including 11-foot left turn lanes at selected locations
- Reduce outside lane widths through median improvements and restriping from 14-foot lanes to 11-foot lanes
- Reduce inside lane widths through median improvements and restriping from 12-foot lanes to 11-foot lanes

- Transit Stop Changes:
  - Remove Stop #3, 5, 22, and 25.
  - Relocate Stops #2 and 18.
  - Consolidate and Move Stops #19 and 26.

Figure 3.4: Proposed Build Typical Section: Silver Star Road to Bonnie Brae Circle



North Segment – Silver Star Road (SR 438) to Bonnie Brae Circle

- Provide following intersection improvements:
  - Belco Drive – Provide full median opening
  - Via Maior – Provide directional median opening
  - Londonderry Boulevard – Provide full median opening
  - Champagne Circle – Provide directional median opening
  - Indian Hill Road – Provide full median opening
  - Van Aken Drive - Provide directional median opening
  - White Heron Drive - Provide directional median opening
  - North Lane - Provide full median opening
- Construct a 16-foot raised median with standard landscaping, including 11-foot left turn lanes with a traffic separator where indicated
- Reduce lane widths through restriping from 12-foot lanes to 11-foot lanes in order to avoid reconstruction the outside curbs
- To accommodate U-turn movements north of Silver Star Road, additional roadway width will be needed to accommodate turning vehicles. This extra width will be achieved by reconstructing the outside curbs through the use of flares or bulb-outs.
- Construct a new 12-foot shared use path on the east side of Pine Hills Road from Belco Drive to Bonnie Brae Circle
- Transit Stop Changes:
  - Remove Stop #12, 14, 15, 30, and 32.
  - Relocate Stops #9, 11, 29, and 33.
  - Consolidate and Move Stops #13 and 27.

4.0 Operational Analysis Comparison

Technical Memorandum No. 5 — Future Travel Demand recommended a growth rate of 1.0% per year to develop the intersection peak hour volumes for the No Build Alternative for the Opening Year 2020 and Design Year 2040. Based on the proposed access management plan for the Pine Hills Road study corridor (see *Technical Memorandum No. 4 — Access Management)*, the No Build Alternative peak hour volumes were redistributed to derive the Build Alternative peak hour volumes which are shown in the following tables. All of the following analyses were performed using Synchro 9, based on the Highway Capacity Manual (HCM) 2010 procedures.

4.1 Automobile LOS (Level of Service)

A summary of the peak hour Automobile LOS results for Opening Year 2020 and Design Year 2040 are shown in **Table 4.1** and **Table 4.2** with comparisons for the No Build and Build alternatives. The results are summarized as follows:

- 2020 Opening Year Results
  - With the exception of the Silver Star Road intersection, all the other signalized intersections are projected to operate at LOS C or better under the No Build alternative.
  - The Silver Star Road intersection is projected to continue to operate at LOS E under the Build Alternative in Design Year 2020.
- 2040 Design Year Results
  - With the exception of the Silver Star Road and the North Lane Road intersection, all the other signalized intersections are projected to operate at LOS C or better under the No Build Alternative for 2040.
  - The Silver Star Road intersection is projected to operate at LOS F under the No Build Alternative
  - The North Lane intersection is projected to operate at LOS E under the No Build Alternative.

Table 4.1 Automobile LOS – AM Peak Hour

#	Intersection	Control Type	Opening Year 2020				Design Year 2040			
			No Build		Build		No Build		Build	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
5	Dolores Drive	Stop*	12.7/114.2	B/F	N/A	N/A	14.8/340.8	B/F	N/A	N/A
5	Dolores Drive	Signal	N/A	N/A	3.3	A	N/A	N/A	3.8	A
10	Indialantic Drive	Signal	12.4	B	12.4	B	14.6	B	14.7	B
23	Balboa Drive	Signal	15.2	B	15.3	B	19.2	B	19.5	B
24	Hernandes Drive	Signal	5.9	A	5.9	A	6.7	A	6.6	A
25	Silver Star Road	Signal	59.9	E	60.7	E	64.6	E	68.5	E
26	Belco Drive	Signal	19.5	B	20.1	C	27.3	B	33.4	C
27	Londonderry Boulevard	Signal	6.8	A	6.7	A	7.8	A	7.8	A
28	Indian Hill Road	Signal	15.1	B	15.1	B	18.9	B	19.2	B
29	North Lane	Signal	36.9	D	36.9	D	43.4	D	43.7	D

(1) Automobile delay and LOS based on Synchro 9 and HCM 2010
** Unsignalized Intersection Analysis. Reported for Worst Condition Delay for Major Street Left/Minor Street Movements.*

Table 4.2 Automobile LOS – PM Peak Hour

#	Intersection	Control Type	Opening Year 2020				Design Year 2040			
			No Build		Build		No Build		Build	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
5	Dolores Drive	Stop*	14.5/173.4	B/F	N/A	N/A	17.8/646.4	C/F	N/A	N/A
5	Dolores Drive	Signal	N/A	N/A	4.7	A	N/A	N/A	7.2	A
10	Indialantic Drive	Signal	14.3	B	14.5	B	18.1	B	18.8	B
23	Balboa Drive	Signal	19.4	B	19.5	B	25.4	B	26.5	C
24	Hernandes Drive	Signal	8.3	A	8.4	A	10.0	B	10.3	B
25	Silver Star Road	Signal	71.8	E	72.1	E	97.4	F	99.3	F
26	Belco Drive	Signal	10.2	B	11.0	B	12.1	B	13.1	B
27	Londonderry Boulevard	Signal	4.9	A	4.9	A	6.1	A	6.3	A
28	Indian Hill Road	Signal	13.9	B	14.0	B	18.8	B	19.4	B
29	North Lane	Signal	41.0	D	41.0	D	55.1	E	56.0	E

(1) Automobile delay and LOS based on Synchro 9 and HCM 2010
** Unsignalized Intersection Analysis. Reported for Worst Condition Delay for the Major Street Left/Minor Street Movements.*

4.2 Pedestrian/Bicycle LOS

A summary of the peak hour Pedestrian and Bicycle LOS results are shown in Tables 4.3 – 4.6 for Opening Year 2020 and for Design Year 2040, comparing the No-Build and Build alternatives based on HCM 2010 methodologies. The results are summarized as follows:

- 2020 Opening Year Results
  - Based on the No Build analysis results, the pedestrian/bicycle modes at all but one (1) of the study signalized intersections are anticipated to operate at LOS D or better, for both opening (2020) and design year (2040).
- 2040 Design Year Results
  - Based on the No Build analysis, the intersection of Silver Star Road will experience a LOS E condition for southbound bicycles during the AM period and LOS E for northbound bicycles during the PM peak period.

Table 4.3 Pedestrian LOS – AM Peak Hour

#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Stop	B	B	F	F	N/A	N/A	N/A	N/A	B	B	F	F	N/A	N/A	N/A	N/A
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	A	A	C	C	N/A	N/A	N/A	N/A	A	A	C	C
10	Indialantic Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
23	Balboa Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
24	Hernandes Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
25	Silver Star Road	Signal	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	Belco Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
27	Londonderry Blvd	Signal	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C
28	Indian Hill Road	Signal	B	N/A	C	B	B	N/A	C	C	B	N/A	C	C	B	N/A	C	C
29	North Lane	Signal	B	B	C	B	B	B	C	B	B	B	C	C	B	B	C	C

Table 4.4 Pedestrian LOS – PM Peak Hour

#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Stop	B	B	F	F	N/A	N/A	N/A	N/A	B	B	F	F	N/A	N/A	N/A	N/A
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	A	A	C	C	N/A	N/A	N/A	N/A	A	A	C	C
10	Indialantic Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
23	Balboa Drive	Signal	B	A	C	C	B	A	C	C	B	A	C	C	B	A	C	C
24	Hernandes Drive	Signal	A	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
25	Silver Star Road	Signal	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
26	Belco Drive	Signal	A	A	C	C	A	A	C	C	A	A	C	C	A	A	C	C
27	Londonderry Blvd	Signal	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C	N/A	B	C	C
28	Indian Hill Road	Signal	B	N/A	C	C	B	N/A	C	C	B	N/A	C	C	B	N/A	C	C
29	North Lane	Signal	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C

Table 4.5 Bicycle LOS – AM Peak Hour

#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	B	B	C	C	N/A	N/A	N/A	N/A	B	B	C	C
10	Indialantic Drive	Signal	B	B	B	C	B	B	C	C	B	B	C	C	B	B	C	C
23	Balboa Drive	Signal	C	B	B	C	C	B	B	C	C	B	C	C	C	B	C	C
24	Hernandes Drive	Signal	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
25	Silver Star Road	Signal	D	C	D	D	D	C	D	D	D	D	D	E	D	D	D	E
26	Belco Drive	Signal	C	B	C	C	C	B	C	C	C	B	C	C	C	B	C	C
27	Londonderry Blvd	Signal	N/A	C	C	D	N/A	C	C	D	N/A	C	C	D	N/A	C	C	D
28	Indian Hill Road	Signal	C	N/A	C	C	C	N/A	C	C	C	N/A	C	C	C	N/A	C	C
29	North Lane	Signal	C	C	B	B	C	C	C	B	C	C	C	C	C	C	C	C

Table 4.6 Bicycle LOS – PM Peak Hour

#	Intersection	Control Type	Opening Year 2020								Design Year 2040							
			No Build LOS				Build LOS				No Build LOS				Build LOS			
			EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB	EB	WB	NB	SB
5	Dolores Drive	Signal	N/A	N/A	N/A	N/A	B	B	C	C	N/A	N/A	N/A	N/A	B	B	D	C
10	Indialantic Drive	Signal	B	B	C	C	B	B	C	C	B	B	C	C	B	B	C	C
23	Balboa Drive	Signal	C	B	C	C	C	B	C	C	C	B	C	C	C	B	D	C
24	Hernandes Drive	Signal	B	B	C	C	B	B	C	C	B	C	D	C	B	C	D	C
25	Silver Star Road	Signal	C	D	D	D	C	D	D	D	D	D	E	D	D	E	E	D
26	Belco Drive	Signal	C	B	C	C	C	B	C	C	C	B	C	C	C	B	C	C
27	Londonderry Blvd	Signal	N/A	B	C	D	N/A	B	D	C	N/A	C	D	D	N/A	C	C	D
28	Indian Hill Road	Signal	C	N/A	D	C	C	N/A	D	C	C	N/A	D	C	C	N/A	D	C
29	North Lane	Signal	C	C	C	B	C	C	C	B	C	D	C	C	C	D	C	C

4.3 Future Conditions Summary

Based on the multimodal operational analysis of the study intersections, it is anticipated that the proposed access modifications will not adversely impact the traffic operations of any mode (Automobile, Pedestrian or Bicycle) under future conditions (2020 and 2040). The signalized intersection delays would slightly increase under the Build Alternative compared to the No Build alternative, but would not result in failing conditions (LOS F). For the bicycle and pedestrian modes, the No Build and Build alternatives have similar results under future conditions. **Table 4.7** displays the impact of the No Build and Build Alternatives on delays and LOS for weekday AM / PM peak hour periods.

Table 4.7 Existing and Future Build Intersection Delay and LOS Comparison

AM Peak Hour												
			Existing		2020				2040			
I #	Intersection	Control	NO Build		NO Build		Build		NO Build		Build	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
23	Pine Hills Road and Balboa Drive	Signal	14.8	B	15.2	B	15.4	B	15.2	B	19.5	B
5	Pine Hills Road and Delores Drive	Stop	12.4 / 100.0	B / F	12.7 / 115.0	B / F			12.4 / 100.0	B / F		
5	Pine Hills Road and Delores Drive	Signal					3.3	A			3.8	A
24	Pine Hills Road and Hernandes Drive	Signal	5.8	A	5.9	A	5.9	A	5.9	A	6.6	A
10	Pine Hills Road and Indialantic Drive	Stop	11.4 / 288.7	B / F	11.6 / 346.6	B / F			12.4 / 100.0	B / F		
10	Pine Hills Road and Indialantic Drive	Signal					12.4	B			14.7	B
25	Pine Hills Road and Silver Star Road	Signal	6.9	E	59.9	E	60.7	E	59.9	E	68.5	E
26	Pine Hills Road and Belco Drive	Signal	18.8	B	19.5	B	20.1	C	19.5	B	33.4	C
27	Pine Hills Road and Londonderry Boulevard	Signal	6.6	A	6.8	A	6.7	A	6.8	A	7.8	A
28	Pine Hills Road and Indian Hill Road	Signal	14.7	B	15.0	B	15.1	B	15.0	B	19.2	B
29	Pine Hills Road and North Lane	Signal	35.9	D	36.9	D	36.9	D	36.9	D	43.7	D
PM Peak Hour												
			Existing		2020				2040			
I #	Intersection	Control Type	NO Build		NO Build		Build		NO Build		Build	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
23	Pine Hills Road and Balboa Drive	Signal	18.8	B	19.4	B	19.5	B	15.2	B	26.5	C
5	Pine Hills Road and Delores Drive	Stop	14.1 / 139.3	B / F	14.5 / 173.4	B / F			12.4 / 100.0	B / F		
5	Pine Hills Road and Delores Drive	Signal					4.7	A			7.2	A
24	Pine Hills Road and Hernandes Drive	Signal	8.1	A	8.4	A	10.9	B	5.9	A	13.3	B
10	Pine Hills Road and Indialantic Drive	Stop	13.1 / 1,461.3	B / F	13.5 / 1777.4	B / F			12.4 / 100.0	B / F		
10	Pine Hills Road and Indialantic Drive	Signal					18.9	B			28.1	C
25	Pine Hills Road and Silver Star Road	Signal	69.6	E	71.8	E	72.1	E	59.9	E	72.7	E
26	Pine Hills Road and Belco Drive	Signal	10.0	B	10.2	B	11.0	B	19.5	B	13.1	B
27	Pine Hills Road and Londonderry Boulevard	Signal	4.8	A	4.9	A	4.9	A	6.8	A	6.2	A
28	Pine Hills Road and Indian Hill Road	Signal	13.5	B	13.9	B	14.0	B	15.0	B	19.4	B
29	Pine Hills Road and North Lane	Signal	39.8	D	41.0	D	41.0	D	36.9	D	41.0	D

1) *Automobile Delay and LOS based on Synchro 9 Unsignalized and Signalized Intersection analysis*

Note the Unsignalized intersection delay and LOS are reported for worst condition Delay and LOS for the Major Street Left / Minor Street movements.

5.0 Screening of Candidate Recommendations

This chapter screens the No Build and Build Alternatives on how well they meet the project purpose and objectives – "to make Pine Hills Road safer for pedestrians and bicyclists." This project has the following objectives:

- Create a roadway environment for users of all ages and abilities
- Provide safe access for pedestrians/bicyclists to cross Pine Hills Road
- Provide safe access to and from schools, religious institutions, businesses, and residential areas – for all modes of travel

The screening of the No Build and Build Alternatives is summarized in **Table 5.1** which indicates how well these alternatives subjectively meet the project purpose and objectives.

Table 5.1: Build / No Build Summary Matrix

Evaluation Criteria (Project Purpose and Objectives)	Alternative	
	No Build Alternative	Build Alternative
Objective #1 - Create a roadway environment for users of all ages and abilities	Low	High
Objective #2 – Provide safe and more convenient access for pedestrians and bicyclists to cross Pine Hills Road	Low	High
Objective #3 – Provide safe access to and from schools, religious institutions, businesses, and residential areas for all modes of travel	Low	High

No Build Alternative

The No Build Alternative is not expected to result in substantial improvement of pedestrian and bicycle safety along the Pine Hills Road Corridor since only a few safety improvements are planned such as roadway lighting from Silver Star Road to Bonnie Brae Circle. The No Build Alternative is also not expected to substantially increase the safety and convenience for pedestrians and bicyclists to cross Pine Hills Road, nor is it expected to advance safe pedestrian and bicycle access to schools, religious institutions, businesses, and residential areas along Pine Hills Road.

Build Alternative

The Build Alternative is projected to result in substantial improvement of pedestrian and bicycle safety along the Pine Hills Road corridor through the use of various safety measures including access management initiatives such as providing a raised median, narrower travel lanes, multi-use path, landscaping, and other pedestrian safety improvements as outlined earlier in this report.

Conclusion

Based on meeting the above objectives, the Build Alternative will be carried forward for determination of benefits and costs. Recommended safety improvement strategies are discussed further in the following sections.

6.0 Proposed Safety Improvements and Preliminary Cost Estimates

This chapter summarizes the methodology and assumptions used in preparing the preliminary cost estimate for various safety improvements identified under this study which are summarized in **Table 6.1**. The cost estimates are based on planning quantities and FDOT unit prices (2017) which should be reviewed and further refined during final design. In addition, the preliminary cost estimates have been further adjusted for the following additional expenses and their assumed percentages:

- Mobilization: 5% of subtotal cost
- Maintenance of Traffic: 5% of subtotal cost
- Contingency: 20% of subtotal cost

The above contingency estimate also provides for design and CEI costs. Listed in **Table 6.1** is a summary of the proposed safety improvements and costs for the Build Alternative. Preliminary cost estimates for the three primary Build Alternative Options shown on Table 6.1 are included in **Appendix B** along with individual cost estimates of each safety improvement. Since the cost estimates are based on planning level quantities, certain assumptions were necessary to determine the cost estimates. Some of the relevant assumptions are listed below:

- Construction of the 16-foot or 23-foot raised medians assume an excavation depth of six inches to remove the existing roadway surface and place the curbing.
- Reduced lane width assumes that the existing pavement will be milled and resurfaced, which will allow new pavement markings to be placed. Milling depth is assumed to be two inches.
- Multi-use path quantities assume the existing concrete sidewalk will be removed and a new 12-foot wide multi-use path will be constructed with four inches of concrete.
- Standard landscaping is consistent with Orange County’s construction program which typically includes sod with crepe myrtles (or equivalent) without irrigation.
- Enhanced landscaping will have a higher level of landscaping including a high use of scrubs and ground cover.
- Median fencing will be provided meeting FDOT Standard Index D804.
- To accommodate U-turn movements north of Silver Star Road where the existing roadway is relatively narrow, the outside curbs will be reconstructed to create a wider roadway using flares or bulb-outs to provide additional width to accommodate turning vehicles.

Table 6.1: Proposed Safety Improvements and Preliminary Cost Estimates

Phase No.	Description of Improvement	Estimated Costs
Phase 1 – South Segment Colonial Drive to Silver Star Road	▪ Construct 23’ raised median, including 11’ left turn lane and separator ▪ Reduce lane widths (restriping after milling & resurfacing) ▪ Construct pedestrian channelizing devices in median ▪ Remove LYNX bus stops #3, 5, 22 and 25. ▪ Relocate LYNX bus stops #2, 18 and 23 ▪ Consolidate and move LYNX bus stops #19 and 26. ▪ Milling & resurfacing ▪ Standard Landscaping ▪ Silver Star Road Intersection Improvements ▪ Install One RRFB or HAWK signal ▪ Install roadway lighting improvements from Colonial Drive to Silver Star Road ▪ Gateway Improvement Features	$3.75 million
Phase 2 – North Segment Silver Star Road to Bonnie Brae Circle	▪ Construct 16’ raised median, including 11’ left turn lane and separator at designated locations ▪ Reduce lane widths (restriping after milling & resurfacing) ▪ Construct pedestrian channelizing devices in median ▪ Construct 12’ shared use path from Belco Drive to Bonnie Brae Circle ▪ Remove LYNX bus stops #12, 14, 15, 30 and 32. ▪ Relocate LYNX bus stops #9, 11, 29 and 33. ▪ Consolidate and move LYNX bus stops #13 and 27. ▪ Add U-turn flares at Belco Drive (SW and NE), Londonderry (NE), Champagne Circle (SW), Indian Hill Road (SW), Van Aken Drive (SW), White Heron Drive (NE), North Lane (SW and NE), Bonnie Brae Circle (SW) ▪ Add bulb-outs at Londonderry (SW), Champagne Circle (NE), Indian Hill Road (NE), and Van Aken Drive (NE), ▪ Milling & resurfacing ▪ Standard Landscaping ▪ Install One RRFB or HAWK signal	$2.05 million

7.0 Benefit/Cost Analysis

This chapter provides an overview of the benefit and cost analyses for the recommended safety measures on this project. Benefits are derived from anticipated reductions in crash experience, while costs are measured in terms of construction and maintenance expenses, with both quantified in dollars over the design life of the safety improvements.

The methodology employed by this report is consistent with the process and guidelines used by the Florida Department of Transportation (FDOT) in their Plans Preparation Manual (PPM). A discount (interest) ratio of 4% was used as suggested in the PPM.

For the purposes of this study, the historical crashes were used to calculate the benefit to cost ratio for the proposed safety improvements. This ratio consists of the estimated annual reduction in crash costs (benefits) divided by the estimated annual increase in combined construction and maintenance expenses (costs). The annualized calculations will show whether the projected expenditure of funds for the crash benefit will exceed the direct cost for the improvement.

The benefit/cost methodology uses the Highway Safety Improvement Program Guideline (HSIPG) cost per crash by facility type as shown in Table 23.6.1 of the FDOT's PPM to estimate the benefit to society, while the cost to society is estimated by the expected cost of right of way, construction, and maintenance. Based on the information provided in the PPM, an average cost per crash (for Florida between 2010 and 2014) for a 4-5 lane urban divided roadway facility was $119,072.

7.1 Process and Assumptions for Calculations of Benefit Costs for Pine Hills Road

The Benefit/Cost analysis for the Pine Hills Road Pedestrian and Bicycle Safety Study was conducted using crash data from 2012 – 1016. This file included a summary of 2,191 crashes that occurred in the study area on and near Pine Hills Road from SR 50 to Bonnie Brae Circle. The process and assumptions for analyzing these files are provided below.

Selection of Data

The dataset provided was for the area along and around Pine Hills Road. This dataset included many crashes on side streets and numerous parking lot or off-roadway crashes that were removed from the analysis leaving only those crashes directly affecting Pine Hills Road. In addition, a 50-foot buffer was created on either side of Silver Star Road and combined with the Pine Hills Road dataset. Furthermore, since the Crash Reduction Factors (CRFs) are being developed with respect to Injury and Property Damage Only (PDO) crashes, we filtered the analysis to only those crashes listed as injury or property damage related. These "filters" reduced the number of crashes to be analyzed to 328 - 206 crashes on the section from SR 50 to Silver Star Road, and 122 on the section from Silver Star Road to Bonnie Brae Circle.

Data Subsets

Given that the proposed crash countermeasures could affect different types of crashes, multiple data subsets were created from the 328-crash dataset file. Geographically, data subsets were created for the south section and the north section. Another dataset including just the area around the intersection of Silver Star Road and Pine Hills Road was created for the analysis of intersection improvements. A subset for night-time crashes was created to analyze lighting impacts. Another dataset for just bicycles and pedestrians was created to analyze bike and pedestrian specific countermeasures: the pathway, midblock crossings, and the median fence

7.2 Crash Reduction Factors (CRF)

This section contains a description of the Crash Reduction Factors (CRFs) derived from FDOT's database and applied to various safety measures associated with this study. Where FDOT CRF's were not available, one of two alternatives was used to develop CRF's:

1. FHWA Crash Modification Factors (CMF) appropriate for the improvement were identified and converted to CRFs.
2. CRFs were developed based upon the alternative studies or corridor specific conditions.

The crash analysis was conducted to emulate FDOT's "CRASH" software format. Therefore, the CRFs used for this study were taken directly from FDOT's table of CRF's which is included in the detailed calculations and supporting data collected in **Appendix C**.

The CRF's employed by this study are listed below and a more detailed breakdown of this methodology is included in **Appendix C**.

- **Improved Lighting**

  Given the high amount of night-time crashes along the Pine Hills Road corridor, providing new lighting with LED fixtures is expected to reduce both pedestrian and vehicular accidents. Since the County already has lighting improvements programmed north of Silver Star Road, this study proposes to focus only on the segment from Colonial Drive to Silver Star Road with upgraded LED lighting.

  - FDOT CRF 65: Roadway lighting, applied to night time crashes only

- **Raised Median**

  As part of the access management plan developed under this study, the existing five-lane undivided section on Pile Hills Road is recommended to be replaced with a four-lane divided section with a raised median. This safety measure is expected to result in crash reductions.

  - FDOT CRF 31: Add raised median

- **Reduced Travel Lane Widths**

  By introducing raised medians, this measure will result in reducing the travel lane widths in order to avoid reconstructing the outside curb lines. Narrower lane widths are expected to provide some benefits by shortening the crossing distances.

  - There are no CMFs for reduced travel lane widths in urban areas. Research by Potts, et al,[1] suggests no difference in crash rates for four-lane divided roadways from 10 – 12 feet

[1] Potts, I., Harwood, D., and K. Richard. Relationship of Lane Width to Safety for Urban and Suburban Arterials. In *Transportation Research Record: Journal of the Transportation Research Board*, No. 2023, Transportation Research Board of the National Academies, Washington, D.C., 2007, pp. 63-82.

- **Intersection Modifications at Silver Star Road and Pine Hills Road**

  This intersection will receive several modifications including reconstructing the curb returns to shorten the crosswalk distances and replacing the crosswalk pavement markings.

  - FDOT CRF 14: Modify intersection at signalized intersection
  - No CMFs are available for reduced crossing distances, though pedestrian and bicycle crash reports have been reviewed for this intersection to identify potentially correctable crashes. None were identified at this intersection.

- **Widening Sidewalks to Provide Multi-Use Path**

  - FDOT CRF 108: Sidewalk construction, Given the nature of the proposed improvements, widening away from the roadway in the form of a shared use path, this CRF was used and applied to pedestrian and bicycle collisions

- **Rectangular Rapid Flashing Beacon (RRFB)**

  There are no CRFs for RRFBs in the FDOT table or at the CMF clearinghouse on the FHWA website. Oregon has assigned a CRF of 56% based upon estimates of potential crash reductions, though this estimate may be overly optimistic to use all for pedestrian crashes. Thus, an evaluation of the specific crashes on the Pine Hills Road corridor was conducted.

  - On Pine Hills Road, 21.7% of the pedestrian and bicycle crashes resulted from motorists' failure to yield at midblock locations. There is an estimated 88% increase in yielding rates when RRFBs are installed with supplemental median signs. Accordingly, a CRF for pedestrian crashes of 19.13% was used based upon the specific number of Failure to Yield crashes.
  - A CRF for pedestrian crashes of 0.19 is recommended based upon the specific number of Motorist Failure to Yield crashes and an estimated 88% increase in yielding rates when RRFBs are installed with supplemental median signs

- **Landscaping**

  The only landscaping CRFs in the FDOT CRFs table are for the inclusion of landscaping at intersections which happened to result in crash increases. A study from Texas A&M suggests that a reduction in crashes occurs when full median lengths are landscaped. The findings were not significant (only two median landscaping projects were evaluated, but comparing the before crash rates) to the after crash rates shows a 49% and 60% reduction in crash rates. This would seem quite a high CRF to attribute to median landscaping.

  The CMF (Crash Modification Factors[2]) Clearinghouse has CMFs for "Area-wide or corridor-specific traffic calming," which for Urban Major and Minor collectors (none is available for arterials) have values of 0.94 (injury) and 0.97 (PDO). This could be attributed to reduced speeds through areas with landscaped medians. Reducing the mean speed by 5% has CRFs of 0.83,

[2] A CMF is equal to 1-CRF. Essentially, a CRF gives a fraction of existing crashes that will be prevented because of a countermeasure's installation. A CMF provides the fraction of crashes that will be remaining after the countermeasure is installed.

0.93 and 0.95 (fatal, injury, PDO). Given the more conservative values for the traffic calming measures, those CMFs (CMF 588 and CMF 591) were used.

- A weighted average was used to determine the final CRF of 0-05. This calculation is shown the spreadsheet on the "South Opt 2 Project Data" and "North Opt 2 Project Data" tabs.
- CMF ID: 588 - Area-wide or corridor-specific traffic calming (serious and minor injury)
- CMF ID: 591 - Area-wide or corridor-specific traffic calming (PDO)

- **Pedestrian Fencing**

There is no CMF for fencing. However, 56% of the pedestrian and bicycle crashes were Dart/Dash type crashes. If one assumes that 80% of midblock crossings can be prevented with a fence-type barrier, this would result in a 0.45 CRF for pedestrian and bicycle crashes. The fencing countermeasure was applied to those scenarios where a median and landscaping were coincident improvements. Thus, it was necessary to translate the pedestrian and bicycle only CRF to an overall CRF. Once again, a weighted average calculation was used. This calculation is shown the spreadsheet on the "South Opt 2 Project Data" and "North Opt 2 Project Data" tabs.

- A 0.45 CRF for was applied for pedestrian and bicycle crashes

- **Transit Stops**

Relocation of the transit stops from near to far side stops require the use of two CMFs.

- CMF ID: 2082 – Presence of near-side transit stop
- CMF ID: 2080 – Presence of far-side transit stop

The presence of a near-side transit stop actually has a negative CMF (installing one increases crashes). Since it is being removed, we simply made this a positive. We then had to combine this with the CMF associated with installing a far-side transit stop (installing one decreases crashes). Covert the CMFs to CRFs

$CRF = 1 – CMF$

Combine CRFs using the following equation:

$CRF_{final} = 1-[(1-CRF_1)^* (1-CRF_2)^* \ldots ^* (1-CRF_n)]$

This equation was used for calculating the effect of all combined CRFs.

- **Gateway Treatment**

This Construction gateway monument (on state-owned road) can be evaluated using the following CMF:

- CMF ID: 2429 –Construction Gateway Monument (on state-owned road). While Pine Hills is not a state-owned roadway, it's character is very similar to many state-owned arterials.

The dataset evaluated for this countermeasure was limited to those crashes within 300 feet of the Silver Star/Pine Hills intersection occurring on Pine Hills Road.

- **Convert Silver Star Intersection from Span Wire to Mast Arms**

There is no CMF listed for conversion to mast arms from a span wire at the CMF Clearing House. FDOT provides a 16% reduction in crashes for upgrading traffic signals.

  - A .16 CRF was applied for this countermeasure.

  The dataset evaluated for this countermeasure was limited to those crashes within 300 feet of the Silver Star/Pine Hills intersection.

- **Educational Programs**

Since 56% of the pedestrian and bicycle crashes were Dart/Dash type crashes, this experience suggests that pedestrians and bicyclist may benefit from an educational program on safe crossing practices. Although there does not appear to be a clear connection that educational safety programs can modify pedestrian behavior, this report suggests that these programs should still be considered for school children.

  - CMF ID: 2206, Implement Safe Routes to School Program (Age 13-17), indicates an increase in crashes. However, a review of the original report reveals that there was no exposure data for the two high schools included in the study. Thus, it is impossible to determine of the efficacy of the CMF on crash rates. This is reflected in the 2-star rating for the CMF which includes three "poor" ratings (Study Design Score, Standard Error Score, and Potential Bias Score).
  - CMF ID: 2200 – This CMF provides for a smaller reduction in crashes than the age specific 5-12. It would still be biased toward younger students, but would have some exposure incorporated into the analysis.

7.3 Cost Estimates for Safety Measures and Benefit Cost Ratios

Estimated costs for each safety measure and benefit cost ratios have been calculated for the three Build Alternative Options as noted in **Table 7.1**. Additional information regarding estimated costs for the safety improvements can be found in **Appendix B,** and the CMF and benefit/cost calculations can be found in **Appendix C**.

By quantifying the benefits of each measure in terms of cost savings from crash reductions, a benefit to cost ratio (B/C) can be developed by applying the estimated costs of each proposed safety improvement. This benefit/cost ratio can then provide a logical rationale for comparing various safety measures and prioritizing the improvements.

A listing of various safety measures, estimated costs, and benefit/cost ratios have been prepared for three primary build options as displayed in **Table 7.1**.

Table 7.1 Estimated Costs and Benefit Cost Ratios for Recommended Safety Improvements

Phase No.	Safety Improvement (s)	Estimated Construction Costs (Current Dollars)	Benefit / Cost Ratio
1	**Colonial Drive to North of Silver Star Road**		
	- Raised Median, Reduced Travel Lanes	$ 1,438,545	11.84
	- Standard Landscaping	$ 148,493	12.81
	- Enhanced Landscaping*	$ 178,706	11.64
	- Silver Star Intersection	$ 188,937	7.61
	- Pedestrian Channelizing Devices	$ 50,515	13.79
	- Changes to LYNX Stops	$ 19,825	19.11
	- RRFB	$ 48,281	3.28
	- HAWK*	$ 91,435	1.90
	- Pedestrian Education	$ -	
	- Lighting (Colonial Drive to Silver Star Road)	$ 1,082,369	4.12
	- Gateway Improvements (Landscape, Hardscape)	$ 396,993	4.31
	- New Signals at Silver Star Road	$ 372,357	66.25
	- **TOTAL (With Standard Landscaping)***	**$ 3,746,315**	
2	**North of Silver Star Road to Bonnie Brae Circle**		
	- Raised Median, Reduced Travel Lanes	$ 1,402,275	7.19
	- Standard Landscaping	$ 64,253	6.88
	- Enhanced Landscaping*	$ 77,643	8.10
	- Reconstruct/Widen Sidewalk	$ 492,986	15.34
	- Pedestrian Channelizing Devices	$ 31,559	8.10
	- Changes to LYNX Stops	$ 5,915	64.04
	- RRFB	$ 48,281	3.28
	- HAWK*	$ 91,435	1.90
	- Pedestrian Education	$ -	
	- **TOTAL (With Standard Landscaping)***	**$ 2,045,269**	

** Enhanced Landscaping, HAWK costs are not included in Phase 1 and 2.*

8. Recommended Improvement Strategies

Based on a combination of evaluations, comparisons, cost estimates, and benefit/cost analyses, the recommended course of action to improve pedestrian and bicycle safety along the corridor is the Build Alternative. The total cost for the Build Alternative Options 2 and 3, as shown on **Table 7.1**, for both segments of the study corridor would be approximately $4 million, in present dollars. Lighting costs would be addressed separately.

We understand Orange County currently has approximately $2 million set aside for improvements in the Pine Hills Road corridor. We would recommend that safety improvements included in Option 2 Build Alternative, Colonial Drive to Silver Star Road, as shown on **Table 7.1** be initiated first since it has a higher benefit/cost ratio than Option 3 (Silver Star Road to Bonnie Brae Circle) and can be accommodated by the County's existing budget. In addition, we would also recommend that Option 1 (Lighting Improvements) be implemented concurrently with Option 2 since these improvements cover the same segment from Colonial Drive to Silver Star Road and the installation costs for the lighting are addressed by the power company rather than the County.

APPENDIX F-1

TECHNICAL MEMORANDUM 6: SAFETY IMPROVEMENT STRATEGIES REPORT

Build Alternative, Raised Median

Figure 1.1

Pine Hills Road Pedestrian/Bicycle Safety Study

Figure 1.2

Pine Hills Road Pedestrian/Bicycle Safety Study

Figure 1.3

Pine Hills Road Pedestrian/Bicycle Safety Study

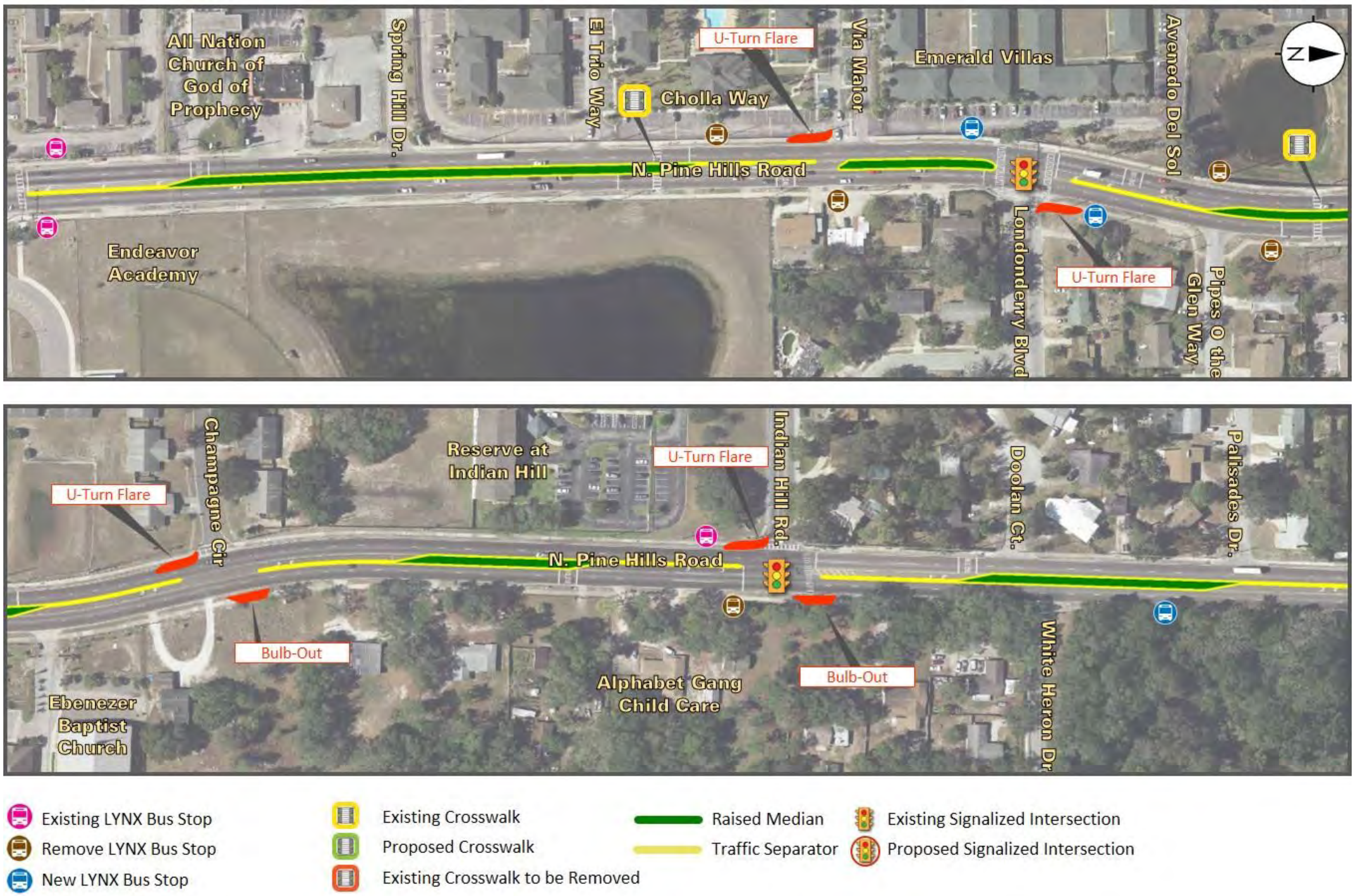


Figure 1.4

Pine Hills Road Pedestrian/Bicycle Safety Study

Figure 1.5

- Existing LYNX Bus Stop
- Remove LYNX Bus Stop
- New LYNX Bus Stop
- Existing Crosswalk
- Proposed Crosswalk
- Existing Crosswalk to be Removed
- Raised Median
- Traffic Separator
- Existing Signalized Intersection
- Proposed Signalized Intersection

APPENDIX F-2

TECHNICAL MEMORANDUM 6: SAFETY IMPROVEMENT STRATEGIES REPORT

Cost Estimates for Safety Measures

RECOMMENDED SAFETY IMPROVEMENTS INITIATIVES OR COMBINATIONS			
Option	**Safety Improvement (s)**	**ESTIMATED COSTS**	**BENEFIT /COST RATIO**
Option 1	**Lighting - Colonial Drive to Silver Star Road**	$ 1,082,369	4.12
Option 2	**Colonial Drive to North of Silver Star Road**		
Option 2A	- Raised Median, Reduced Travel Lanes	$ 1,438,545	11.84
Option 2B	- Standard Landscaping With Raised Median, Reduced Travel Lanes	$ 1,587,038	12.81
Option 2C	- Pedestrian Fencing With Std Landscaping, Raised Median, Reduced Travel Lanes	$ 1,637,553	13.79
Option 2D	- Enhanced Landscaping With Raised Median, Reduced Travel Lanes	$ 1,617,251	12.57
Option 2E	- Pedestrian Fencing With Enhanced Landscaping, Raised Median, Reduced Travel Lanes	$ 1,667,766	13.54
Option 2F	- Silver Star Intersection (Curb Return Modifications, New Crosswalks)	$ 188,937	7.61
Option 2G	- Changes to LYNX Stops	$ 19,825	19.11
Option 2H	- RRFB (One Site)	$ 48,281	3.28
Option 2I	- Pedestrian Education	$ -	
	Total (With Standard Landscaping)	**$ 1,894,595**	
Option 3	**North of Silver Star Road to Bonnie Brae Circle**		
Option 3A	- Raised Median, Reduced Travel Lanes	$ 1,402,275	7.19
Option 3B	- Std Landscaping With Raised Median, Reduced Travel Lanes	$ 1,466,528	8.28
Option 3C	- Pedestrian Fencing With Standard Landscaping, Raised Median, Reduced Travel Lanes	$ 1,498,087	8.67
Option 3D	- Pedestrian Fencing With Enhanced Landscaping, Raised Median, Reduced Travel Lanes	$ 1,511,477	8.59
Option 3E	- Reconstruct/Widen Sidewalk for Multiuse Path	$ 492,986	15.34
Option 3F	- Changes to LYNX Stops	$ 5,915	64.04
Option 3G	- RRFB (One Site)	$ 48,281	3.28
Option 3H	- Pedestrian Education	$ -	
	Total (With Standard Landscaping)	**$ 2,045,268**	

PINE HILLS ROAD PEDESTRIAN BICYCLE SAFETY STUDY
SUMMARY OF SAFETY IMPROVEMENTS COSTS

SAFETY IMPROVEMENT	ESTIMATED CONSTR COSTS
Lighting - Colonial Drive to Silver Star Road	$ 1,082,369
Road	$ 1,438,545
Raised Median (16') - Silver Star Road to Bonnie Brae Crc	$ 1,402,275
Raised Median (16') - Colonial Drive to Silver Star Road	$ 3,006,093
Landscaping (County Standard - $75,000/Mile) Colonial Drive to Bonnie Brae Circle	$ 212,745
Landscaping (Enhanced) Colonial Drive to Bonnie Brae Circle	$ 256,349
Pedestrian Fencing Colonial Drive to Bonnie Brae Circle	$ 82,074
Reduce Travel Lanes to 11' Wide	Cost Included in Median Changes
Silver Star Road Improvements	$ 188,937
Changes to LYNX Bus Stops	$ 39,650
Reconstruct/Widen Existing Sidewalk North of Silver Star Road to 12' Mult-Use Path	$ 492,986
Rapid Rectangular Flashing Beacons (9 Locations)	$ 434,526
Pedestrian Educational Programs	No Cost

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	**IMPROVEMENT DESCRIPTION**	**ESTIMATED TOTAL COST**
PROPOSED SAFETY MEASURE #1 - LIGHTING		
<u>Pine Hills Road From North Of SR 50 to Silver Star</u>		
	Lighting Replacement	$ 832,591.54
	Subtotal	$ 832,591.54
	Mobilization (5%)	$ 41,629.58
	Maintenance of Traffic (5%)	$ 41,629.58
	Contingency (20%)	$ 166,518.31
	Total	**$ 1,082,369.00**
PROPOSED SAFETY MEASURE #2 - NEW 23' MEDIAN SOUTH OF SILVER STAR RD.		
<u>South Section - From State Road 50 to Silver Star Road</u>		
	Milling and resurfacing	$ 592,013.32
	Reduce lane widths (restriping)	$ 40,282.44
	Construct 23' raised median	$ 474,277.62
	Subtotal	$ 1,106,573.38
	Mobilization (5%)	$ 55,328.67
	Maintenance of Traffic (5%)	$ 55,328.67
	Contingency (20%)	$ 221,314.68
	Total	**$ 1,438,545.39**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS
ALTERNATIVE IMPROVEMENTS

LOCATION	IMPROVEMENT DESCRIPTION	ESTIMATED TOTAL COST
PROPOSED SAFETY MEASURE #3 - NEW 16' MEDIAN NORTH OF SILVER STAR RD.		
North Segment- From Silver Star Road to Bonnie Brae Circle		
	Milling and resurfacing	$ 370,026.78
	Reduce lane widths (restriping)	$ 30,647.22
	Construct 16' raised median with Type "E" curb	$ 552,614.54
	U-turn flare at SW corner of Belco Drive	$ 11,446.02
	U-turn flare at NE corner of Evans HS	$ 12,304.76
	U-turn bulb-out on south side of El Trio Way	$ -
	U-turn flare at SW corner of Londonderry Boulevard	$ 9,898.91
	U-turn flare at NE corner of Londonderry Boulevard	$ 10,532.41
	U-turn flare at SW corner of Champagne Circle	$ 10,305.81
	U-turn flare at SW corner of Indian Hill Road	$ 10,559.68
	U-turn bulb-out north of Indian Hill Road	$ 9,518.08
	U-turn flare at SW corner of Van Aken Drive	$ 10,827.15
	U-turn flare at NE corner of White Heron Drive	$ 10,545.74
	U-turn flare at NE corner of North Lane	$ 10,569.34
	U-turn flare at SW corner of North Lane	$ 7,462.83
	U-turn flare at SW corner of Bonnie Brae Circle	$ 11,413.95
	Subtotal	$ 1,078,673.20
	Mobilization (5%)	$ 53,933.66
	Maintenance of Traffic (5%)	$ 53,933.66
	Contingency (20%)	$ 215,734.64
	Total	**$ 1,402,275.16**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	**IMPROVEMENT DESCRIPTION**	**ESTIMATED TOTAL COST**
PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.		
South Segment - From State Road 50 to Silver Star Road		
	Milling and resurfacing	$ 599,083.67
	Reduce lane widths (restriping)	$ 40,282.44
	Construct 16' raised median	$ 717,597.82
	U-turn flare at NE corner of Alhambra Drive	$ 3,727.93
	U-turn flare at SW corner of Deauville Drive	$ 3,727.93
	U-turn flare at NE corner of Deauville Drive	$ 3,727.93
	U-turn flare at SW corner of Balboa Drive	$ 3,727.93
	U-turn flare at NE corner of Balboa Drive	$ 3,727.93
	U-turn flare at NE corner of Dolores Drive	$ 3,727.93
	U-turn flare at NE corner of Cortez Drive	$ 3,727.93
	U-turn flare at SW corner of Cortez Drive	$ 3,727.93
	U-turn flare at SW corner of Elinore Drive	$ 3,727.93
	U-turn flare at NE corner of Ferdinand Drive	$ 3,727.93
	U-turn flare at SW corner of Ferdinand Drive	$ 3,727.93
	U-turn flare at NE corner of Hernandes Drive	$ 3,727.93
	U-turn flare at SW corner of Hernandes Drive	$ 3,727.93
	U-turn flare at NE corner of Indialantic Drive	$ 3,727.93
	U-turn flare at SW corner of Indialantic Drive	$ 3,727.93
	U-turn flare at NE corner of Figwood Lane	$ 3,727.93
	U-turn flare at SW corner of Figwood Lane	$ 3,727.93
	Outside curb reconstruction	$ 529,480.44
	Drainage improvements	$ 362,560.00
	Subtotal	$ 2,312,379.11
	Mobilization (5%)	$ 115,618.96
	Maintenance of Traffic (5%)	$ 115,618.96
	Contingency (20%)	$ 462,475.82
	Total	**$ 3,006,092.84**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	IMPROVEMENT DESCRIPTION	ESTIMATED TOTAL COST
PROPOSED SAFETY MEASURE #5 - LANDSCAPING (COUNTY STANDARD)		
Landscaping for Prop. Safety Measure #2 from State Rd 50 to Silver Star Rd		
	Landscaping	$ 114,225.00
	Subtotal	$ 114,225.00
	Mobilization (5%)	$ 5,711.25
	Maintenance of Traffic (5%)	$ 5,711.25
	Contingency (20%)	$ 22,845.00
	Total	**$ 148,492.50**
Landscaping for Prop. Safety Measure #3 from Silver Star Rd to Bonnie Brae Circle		
	Landscaping	$ 49,425.00
	Subtotal	$ 49,425.00
	Mobilization (5%)	$ 2,471.25
	Maintenance of Traffic (5%)	$ 2,471.25
	Contingency (20%)	$ 9,885.00
	Total	**$ 64,252.50**
Landscaping for Prop. Safety Measure #4 from State Rd 50 to Silver Star Rd		
	Landscaping	$ 114,225.00
	Subtotal	$ 114,225.00
	Mobilization (5%)	$ 5,711.25
	Maintenance of Traffic (5%)	$ 5,711.25
	Contingency (20%)	$ 22,845.00
	Total	**$ 148,492.50**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	IMPROVEMENT DESCRIPTION	ESTIMATED TOTAL COST
PROPOSED SAFETY MEASURE #6 - LANDSCAPING (ENHANCED)		
Landscaping for Prop. Safety Measure #2 from State Rd 50 to Silver Star Rd		
	Landscaping	$ 137,466.00
	Subtotal	$ 137,466.00
	Mobilization (5%)	$ 6,873.30
	Maintenance of Traffic (5%)	$ 6,873.30
	Contingency (20%)	$ 27,493.20
	Total	**$ 178,705.80**
Landscaping for Prop. Safety Measure #3 from Silver Star Rd to Bonnie Brae Cir		
	Landscaping	$ 59,725.35
	Subtotal	$ 59,725.35
	Mobilization (5%)	$ 2,986.27
	Maintenance of Traffic (5%)	$ 2,986.27
	Contingency (20%)	$ 11,945.07
	Total	**$ 77,642.96**
Landscaping for Prop. Safety Measure #4 from State Rd 50 to Silver Star Rd		
	Landscaping	$ 323,700.00
	Subtotal	$ 323,700.00
	Mobilization (5%)	$ 16,185.00
	Maintenance of Traffic (5%)	$ 16,185.00
	Contingency (20%)	$ 64,740.00
	Total	**$ 420,810.00**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	**IMPROVEMENT DESCRIPTION**	**ESTIMATED TOTAL COST**
PROPOSED SAFETY MEASURE #7 - PEDESTRIAN FENCING		
Ped. Fencing for Prop. Safety Measure #2 from State Rd 50 to Silver Star Rd		
	Pedestrian Fencing	$ 38,857.41
	Subtotal	$ 38,857.41
	Mobilization (5%)	$ 1,942.87
	Maintenance of Traffic (5%)	$ 1,942.87
	Contingency (20%)	$ 7,771.48
	Total	**$ 50,514.63**
Ped. Fencing for Prop. Safety Measure #3 from Silver Star Rd to Bonnie Brae Cir		
	Pedestrian Fencing	$ 24,276.27
	Subtotal	$ 24,276.27
	Mobilization (5%)	$ 1,213.81
	Maintenance of Traffic (5%)	$ 1,213.81
	Contingency (20%)	$ 4,855.25
	Total	**$ 31,559.15**
Ped. Fencing for Prop. Safety Measure #4 from State Rd 50 to Silver Star Rd		
	Pedestrian Fencing	$ 31,874.40
	Subtotal	$ 31,874.40
	Mobilization (5%)	$ 1,593.72
	Maintenance of Traffic (5%)	$ 1,593.72
	Contingency (20%)	$ 6,374.88
	Total	**$ 41,436.72**
PROPOSED SAFETY MEASURE #9 - SILVER STAR ROAD IMPROVEMENTS		
	Silver Star Road Intersection Improvements	$ 145,336.00
	Subtotal	$ 145,336.00
	Mobilization (5%)	$ 7,266.80
	Maintenance of Traffic (5%)	$ 7,266.80
	Contingency (20%)	$ 29,067.20
	Total	**$ 188,936.80**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	IMPROVEMENT DESCRIPTION	ESTIMATED TOTAL COST
PROPOSED SAFETY MEASURE #10 - REMOVE, RELOCATE LYNX BUS STOPS		
Relocate LYNX Bus Stops for Prop. Safety Measure #2 from State Rd 50 to Silver Star Rd		
	Relocate Existing Stops	$ 5,250.00
	Relocate Existing Stops with Shelter	$ 10,000.00
	Subtotal	$ 15,250.00
	Mobilization (5%)	$ 762.50
	Maintenance of Traffic (5%)	$ 762.50
	Contingency (20%)	$ 3,050.00
	Total	**$ 19,825.00**
Relocate LYNX Bus Stops for Prop. Safety Measure #3 from Silver Star Rd to Bonnie Brae Cir		
	Relocate Existing Stops	$ 4,550.00
	Subtotal	$ 4,550.00
	Mobilization (5%)	$ 227.50
	Maintenance of Traffic (5%)	$ 227.50
	Contingency (20%)	$ 910.00
	Total	**$ 5,915.00**
Relocate LYNX Bus Stops for Prop. Safety Measure #4 from State Rd 50 to Silver Star Rd		
	Relocate Existing Stops	$ 5,250.00
	Relocate Existing Stops with Shelter	$ 10,000.00
	Subtotal	$ 15,250.00
	Mobilization (5%)	$ 762.50
	Maintenance of Traffic (5%)	$ 762.50
	Contingency (20%)	$ 3,050.00
	Total	**$ 19,825.00**
PROPOSED SAFETY MEASURE #11 - CONSTRUCT 12' MULTI USE PATH FROM SILVER STAR RD. TO BONNIE BRAE CIR.		
	Remove existing sidewalk	$ 71,594.50
	Construct 12' multi use path	$ 307,625.40
	Subtotal	$ 379,219.90
	Mobilization (5%)	$ 18,961.00
	Maintenance of Traffic (5%)	$ 18,961.00
	Contingency (20%)	$ 75,843.98
	Total	**$ 492,985.87**

PINE HILLS ROAD - PROPOSED IMPROVEMENTS ALTERNATIVE IMPROVEMENTS		
LOCATION	**IMPROVEMENT DESCRIPTION**	**ESTIMATED TOTAL COST**
PROPOSED SAFETY MEASURE #12 - RAPID RECTANGULAR FLASHING BEACONS		
RRFB's for Prop. Safety Measure #2 from State Rd 50 to Silver Star Rd		
	Midblock crosswalk	$ 185,695.00
	Subtotal	$ 185,695.00
	Mobilization (5%)	$ 9,284.75
	Maintenance of Traffic (5%)	$ 9,284.75
	Contingency (20%)	$ 37,139.00
	Total	**$ 241,403.50**
RRFB's for Prop. Safety Measure #3 from Silver Star Rd to Bonnie Brae Cir		
	Midblock crosswalk	$ 148,556.00
	Subtotal	$ 148,556.00
	Mobilization (5%)	$ 7,427.80
	Maintenance of Traffic (5%)	$ 7,427.80
	Contingency (20%)	$ 29,711.20
	Total	**$ 193,122.80**
RRFB's for Prop. Safety Measure #4 from State Rd 50 to Silver Star Rd		
	Midblock crosswalk	$ 185,695.00
	Subtotal	$ 185,695.00
	Mobilization (5%)	$ 9,284.75
	Maintenance of Traffic (5%)	$ 9,284.75
	Contingency (20%)	$ 37,139.00
	Total	**$ 241,403.50**

Engineer's Estimate

PROPOSED SAFETY MEASURE #1 - LIGHTING

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
LIGHTING					
LIGHTING REPLACEMENT - PINE HILLS ROAD FROM NORTH OF SR 50 TO SILVER STAR					
0630 2 11	CONDUIT OPEN TRENCH	LF	14200	$ 7.25	$ 102,950.00
0630 2 12	CONDUIT DIRECTIONAL BORE	LF	4800	$ 16.69	$ 80,112.00
0635 2 11	PULL & JUNCTION BOX (F&I) 13"X24"	EA	80	$ 613.07	$ 49,045.60
0639 2 1	ELECTRICAL SERVICE WIRE	LF	600	$ 4.75	$ 2,850.00
0715 1 12	LIGHTING - CONDUCTORS (F&I)(NO. 8 TO NO. 6)	LF	42800	$ 1.26	$ 53,928.00
Reconstruct,	LIGHTING - CONDUCTORS (F&I)(NO. 4 TO NO. 2)	LF	14200	$ 2.00	$ 28,400.00
0715 4 121	LIGHT POLE COMPLETE, (F&I STD. POLE)(130)(40')	EA	76	$ 5,856.29	$ 445,078.04
0715 7 11	LOAD CENTER (F&I)(SECONDARY VOLTAGE)	EA	2	$ 13,365.79	$ 26,731.58
0715 500 1	LIGHT POLE CABLE DISTRIBUTION SYSTEM (CONVENTIONAL)	EA	76	$ 572.32	$ 43,496.32
	SUBTOTAL				$ 832,591.54

Engineer's Estimate

PROPOSED SAFETY MEASURE #2 - NEW 23' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
CONSTRUCT 23' RAISED MEDIAN					
0110 4 10	REMOVAL OF EXISTING ASPHALT	SY	5962	$ 19.22	$ 114,589.64
0120 6	EMBANKMENT	CY	5307	$ 9.14	$ 48,505.98
0520 1 10	CONCRETE CURB & GUTTER, TYPE E	LF	16378	$ 19.00	$ 311,182.00
	STANDARD COUNTY LANDSCAPING (INCLUDED IN PROPOSED SAFETY MEASURE #5)	GM	1.523	$ 75,000.00	
REDUCED LANE WIDTH (Replace pavement markings after M&R)					
0706 3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	430	$ 3.38	$ 1,453.40
0711 15101	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES WHITE, SOLID, 6"	GM	3.732	$ 4,590.08	$ 17,130.18
0711 15131	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SKIP, 6"	GM	3.208	$ 1,324.84	$ 4,250.09
0711 15123	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SOLID, 12"	LF	2779	$ 1.30	$ 3,612.70
0711 15125	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SOLID, 24"	LF	316	$ 2.60	$ 821.60
0711 15201	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, YELLOW, SOLID, 6"	GM	3.115	$ 4,178.00	$ 13,014.47
MILLING AND RESURFACING					
0327 70 01	MILLING EXISTING ASPHALT PAVEMENT (1" AVG. DEPTH)	SY	75554	$ 3.44	$ 259,905.76
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	4155.5	$ 79.92	$ 332,107.56
MIDBLOCK CROSSWALK					
0654 2 21	RECTANGULAR RAPID FLASHING BEACON, FURNISH & INSTALL- SOLAR POWERED, COMPLETE ASSEMBLY-SINGLE DIRECTION	AS	4	$ 64,495.00	
	SUBTOTAL				$ 1,106,573.38

Engineer's Estimate

PROPOSED SAFETY MEASURE #3 - NEW 16' MEDIAN NORTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
CONSTRUCT 16' RAISED MEDIAN					
0110 4 10	REMOVAL OF EXISTING PAVMENT	SY	15038	$ 19.22	$ 289,030.36
0120 6	EMBANKMENT	CY	1987	$ 9.14	$ 18,161.18
0520 1 10	CONCRETE CURB & GUTTER, TYPE E	LF	12917	$ 19.00	$ 245,423.00
	STANDARD COUNTY LANDSCAPING (INCLUDED IN PROP SAFETY MEASURE #5)	GM	0.659	$ 75,000.00	
REDUCED LANE WIDTH (Replace pavement markings after M&R)					
0706 3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	326	$ 3.38	$ 1,101.88
0711 15101	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES WHITE, SOLID, 6"	GM	2.725	$ 4,590.08	$ 12,507.97
0711 15131	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SKIP, 6"	GM	2.282	$ 1,324.84	$ 3,023.28
0711 15123	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SOLID, 12"	LF	2497	$ 1.30	$ 3,246.10
0711 15125	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SOLID, 24"	LF	211	$ 2.60	$ 548.60
0711 15201	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, YELLOW, SOLID, 6"	GM	2.446	$ 4,178.00	$ 10,219.39
U-TURN FLARE - Belco Drive					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	68	$ 19.22	$ 1,306.96
0120 1	REGULAR EXCAVATION	CY	79	$ 8.00	$ 632.00
0160 4	TYPE B STABILIZATION	SY	119	$ 5.57	$ 662.83
0285 7	OPTIONAL BASE	SY	119	$ 24.32	$ 2,894.08
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	24.9	$ 79.92	$ 1,990.01
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	107	$ 14.90	$ 1,594.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	68	$ 34.41	$ 2,339.88
0570 1 2	PERFORMANCE TURF, SOD	SY	11	$ 2.36	$ 25.96
U-TURN FLARE - Evans High School					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	56	$ 19.22	$ 1,076.32
0120 1	REGULAR EXCAVATION	CY	101	$ 8.00	$ 808.00
0160 4	TYPE B STABILIZATION	SY	151	$ 5.57	$ 841.07
0285 7	OPTIONAL BASE	SY	151	$ 24.32	$ 3,672.32
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	23.1	$ 79.92	$ 1,846.15
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	141	$ 14.90	$ 2,100.90
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	56	$ 34.41	$ 1,926.96
0570 1 2	PERFORMANCE TURF, SOD	SY	14	$ 2.36	$ 33.04

Engineer's Estimate

PROPOSED SAFETY MEASURE #3 - NEW 16' MEDIAN NORTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - El Trio Way					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	79	$ 19.22	$ 1,518.38
0120 1	REGULAR EXCAVATION	CY	67	$ 8.00	$ 536.00
0160 4	TYPE B STABILIZATION	SY	101	$ 5.57	$ 562.57
0285 7	OPTIONAL BASE	SY	101	$ 24.32	$ 2,456.32
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	19.8	$ 79.92	$ 1,582.42
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	79	$ 14.90	$ 1,177.10
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	56	$ 34.41	$ 1,926.96
0570 1 2	PERFORMANCE TURF, SOD	SY	8	$ 2.36	$ 18.88
BULBOUT - Londonderry Blvd					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	46	$ 19.22	$ 884.12
0120 1	REGULAR EXCAVATION	CY	93	$ 8.00	$ 744.00
0160 4	TYPE B STABILIZATION	SY	106	$ 5.57	$ 590.42
0285 7	OPTIONAL BASE	SY	106	$ 24.32	$ 2,577.92
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	25.1	$ 79.92	$ 2,005.99
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	100	$ 14.90	$ 1,490.00
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	46	$ 34.41	$ 1,582.86
0570 1 2	PERFORMANCE TURF, SOD	SY	10	$ 2.36	$ 23.60
U-TURN FLARE - Londonderry Boulevard					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	43	$ 19.22	$ 826.46
0120 1	REGULAR EXCAVATION	CY	71	$ 8.00	$ 568.00
0160 4	TYPE B STABILIZATION	SY	140	$ 5.57	$ 779.80
0285 7	OPTIONAL BASE	SY	140	$ 24.32	$ 3,404.80
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	21.7	$ 79.92	$ 1,734.26
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	115	$ 14.90	$ 1,713.50
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	43	$ 34.41	$ 1,479.63
0570 1 2	PERFORMANCE TURF, SOD	SY	11	$ 2.36	$ 25.96

Engineer's Estimate

PROPOSED SAFETY MEASURE #3 - NEW 16' MEDIAN NORTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - Champagne Circle					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	46	$ 19.22	$ 884.12
0120 1	REGULAR EXCAVATION	CY	95	$ 8.00	$ 760.00
0160 4	TYPE B STABILIZATION	SY	142	$ 5.57	$ 790.94
0285 7	OPTIONAL BASE	SY	142	$ 24.32	$ 3,453.44
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	16.9	$ 79.92	$ 1,350.65
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	98	$ 14.90	$ 1,460.20
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	46	$ 34.41	$ 1,582.86
0570 1 2	PERFORMANCE TURF, SOD	SY	10	$ 2.36	$ 23.60
U-TURN FLARE - Indian Hill Road					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	66	$ 19.22	$ 1,268.52
0120 1	REGULAR EXCAVATION	CY	80	$ 8.00	$ 640.00
0160 4	TYPE B STABILIZATION	SY	120	$ 5.57	$ 668.40
0285 7	OPTIONAL BASE	SY	120	$ 24.32	$ 2,918.40
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	19.8	$ 79.92	$ 1,582.42
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	80	$ 14.90	$ 1,192.00
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	66	$ 34.41	$ 2,271.06
0570 1 2	PERFORMANCE TURF, SOD	SY	8	$ 2.36	$ 18.88
U-TURN FLARE - Indian Hill Road					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	46	$ 19.22	$ 884.12
0120 1	REGULAR EXCAVATION	CY	68	$ 8.00	$ 544.00
0160 4	TYPE B STABILIZATION	SY	103	$ 5.57	$ 573.71
0285 7	OPTIONAL BASE	SY	103	$ 24.32	$ 2,504.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	23.4	$ 79.92	$ 1,870.13
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	103	$ 14.90	$ 1,534.70
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	46	$ 34.41	$ 1,582.86
0570 1 2	PERFORMANCE TURF, SOD	SY	10	$ 2.36	$ 23.60

Engineer's Estimate

PROPOSED SAFETY MEASURE #3 - NEW 16' MEDIAN NORTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - Van Aken Drive					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	50	$ 19.22	$ 961.00
0120 1	REGULAR EXCAVATION	CY	88	$ 8.00	$ 704.00
0160 4	TYPE B STABILIZATION	SY	132	$ 5.57	$ 732.46
0285 7	OPTIONAL BASE	SY	132	$ 24.32	$ 3,198.08
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	23.1	$ 79.92	$ 1,846.15
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	110	$ 14.90	$ 1,639.00
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	50	$ 34.41	$ 1,720.50
0570 1 2	PERFORMANCE TURF, SOD	SY	11	$ 2.36	$ 25.96
U-TURN FLARE - White Heron Drive					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	42	$ 19.22	$ 807.24
0120 1	REGULAR EXCAVATION	CY	101	$ 8.00	$ 808.00
0160 4	TYPE B STABILIZATION	SY	152	$ 5.57	$ 846.64
0285 7	OPTIONAL BASE	SY	152	$ 24.32	$ 3,696.64
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	17.5	$ 79.92	$ 1,398.60
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	102	$ 14.90	$ 1,519.80
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	42	$ 34.41	$ 1,445.22
0570 1 2	PERFORMANCE TURF, SOD	SY	10	$ 2.36	$ 23.60
U-TURN FLARE - North Lane					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	63	$ 19.22	$ 1,210.86
0120 1	REGULAR EXCAVATION	CY	80	$ 8.00	$ 640.00
0160 4	TYPE B STABILIZATION	SY	120	$ 5.57	$ 667.29
0285 7	OPTIONAL BASE	SY	120	$ 24.32	$ 2,913.54
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	16.7	$ 79.92	$ 1,334.66
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	108	$ 14.90	$ 1,609.20
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	63	$ 34.41	$ 2,167.83
0570 1 2	PERFORMANCE TURF, SOD	SY	11	$ 2.36	$ 25.96

Engineer's Estimate

PROPOSED SAFETY MEASURE #3 - NEW 16' MEDIAN NORTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - North Lane					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	0	$ 19.22	$ -
0120 1	REGULAR EXCAVATION	CY	93	$ 8.00	$ 744.00
0160 4	TYPE B STABILIZATION	SY	104	$ 5.57	$ 579.28
0285 7	OPTIONAL BASE	SY	104	$ 24.32	$ 2,529.28
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	24.9	$ 79.92	$ 1,990.01
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	107	$ 14.90	$ 1,594.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	0	$ 34.41	$ -
0570 1 2	PERFORMANCE TURF, SOD	SY	11	$ 2.36	$ 25.96
U-TURN FLARE - Bonnie Brae Circle					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	54	$ 19.22	$ 1,037.88
0120 1	REGULAR EXCAVATION	CY	100	$ 8.00	$ 800.00
0160 4	TYPE B STABILIZATION	SY	151	$ 5.57	$ 838.84
0285 7	OPTIONAL BASE	SY	151	$ 24.32	$ 3,662.59
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	19.6	$ 79.92	$ 1,566.43
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	109	$ 14.90	$ 1,624.10
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	54	$ 34.41	$ 1,858.14
0570 1 2	PERFORMANCE TURF, SOD	SY	11	$ 2.36	$ 25.96
MILLING AND RESURFACING					
0327 70 01	MILLING EXISTING ASPHALT PAVEMENT (1" AVG. DEPTH)	SY	47224	$ 3.44	$ 162,450.56
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	2597.3	$ 79.92	$ 207,576.22
MIDBLOCK CROSSWALK					
0654 2 21	RECTANGULAR RAPID FLASHING BEACON, FURNISH & INSTALL- SOLAR POWERED, COMPLETE ASSEMBLY-SINGLE DIRECTION	AS	3	$ 64,495.00	

Engineer's Estimate

PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
CONSTRUCT 16' RAISED MEDIAN					
0110 4 10	REMOVAL OF EXISTING ASPHALT	SY	19881	$ 19.22	$ 382,112.82
0120 6	EMBANKMENT	CY	2950	$ 9.14	$ 26,963.00
0520 1 10	CONCRETE CURB & GUTTER, TYPE E	LF	16238	$ 19.00	$ 308,522.00
	STANDARD COUNTY LANDSCAPING	GM	0.917	$ 75,000.00	
REDUCED LANE WIDTH (Replace pavement markings after M&R)					
0706 3	RETRO-REFLECTIVE PAVEMENT MARKERS	EA	430	$ 3.38	$ 1,453.40
0711 15101	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES WHITE, SOLID, 6"	GM	3.732	$ 4,590.08	$ 17,130.18
0711 15131	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SKIP, 6"	GM	3.208	$ 1,324.84	$ 4,250.09
0711 15123	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SOLID, 12"	LF	2779	$ 1.30	$ 3,612.70
0711 15125	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, WHITE, SOLID, 24"	LF	316	$ 2.60	$ 821.60
0711 15201	THERMOPLASTIC, STANDARD-OPEN GRADED ASPHALT SURFACES, YELLOW, SOLID, 6"	GM	3.115	$ 4,178.00	$ 13,014.47
MILLING AND RESURFACING					
0327 70 01	MILLING EXISTING ASPHALT PAVEMENT (1" AVG. DEPTH)	SY	76457	$ 3.44	$ 263,012.08
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	4205.1	$ 79.92	$ 336,071.59
MIDBLOCK CROSSWALK					
0654 2 21	RECTANGULAR RAPID FLASHING BEACON, FURNISH & INSTALL- SOLAR POWERED, COMPLETE ASSEMBLY-SINGLE DIRECTION	AS	4	$ 64,495.00	
U-TURN FLARE - Alhambra Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2		SY	7	$ 2.36	$ 16.52
	PERFORMANCE TURF, SOD				

Engineer's Estimate

PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - Deauville Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Deauville Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Balboa Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Balboa Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52

Engineer's Estimate

PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - Dolores Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE -Cortez Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE -Cortez Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Elinore Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52

Engineer's Estimate

PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - Ferdinand Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Ferdinand Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Hernandes Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Hernandes Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52

Engineer's Estimate

PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
U-TURN FLARE - Indialantic Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Indialantic Drive					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Figwood Lane					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52
U-TURN FLARE - Figwood Lane					
0120 1	REGULAR EXCAVATION	CY	36	$ 8.00	$ 288.00
0160 4	TYPE B STABILIZATION	SY	53	$ 5.57	$ 295.21
0285 7	OPTIONAL BASE	SY	53	$ 24.32	$ 1,288.96
0334 1	SUPERPAVE ASPHALTIC CONCRETE	TN	8.8	$ 79.92	$ 703.30
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	67	$ 14.90	$ 998.30
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	4	$ 34.41	$ 137.64
0570 1 2	PERFORMANCE TURF, SOD	SY	7	$ 2.36	$ 16.52

Engineer's Estimate

PROPOSED SAFETY MEASURE #4 - NEW 16' MEDIAN SOUTH OF SILVER STAR RD.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
CURB RECONSTRUCTION					
0110 4 10	REMOVAL OF EXISTING CONCRETE	SY	4096	$ 19.22	$ 78,725.12
0110 4 10	REMOVAL OF EXISTING ASPHALT	SY	6918	$ 19.22	$ 132,963.96
0120 1	REGULAR EXCAVATION	CY	604	$ 8.00	$ 4,832.00
0520 1 10	CONCRETE CURB & GUTTER, TYPE F	LF	18430	$ 14.90	$ 274,607.00
0570 1 2	PERFORMANCE TURF, SOD	SY	16251	$ 2.36	$ 38,352.36
DRAINAGE IMPROVEMENTS					
	PIPE CULVERT OPTIONAL MATERIAL, ROUND, 18", GUTTER DRAIN	LF	448	$ 95.00	$ 42,560.00
	DRAINAGE INLET	EA	64	$ 5,000.00	$ 320,000.00

Engineer's Estimate

PROPOSED SAFETY MEASURE #5 - LANDSCAPING (COUNTY STANDARD)

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
LANDSCAPING FOR PROP. SAFETY MEASURE #2 FROM STATE RD 50 TO SILVER STAR RD					
	STANDARD COUNTY LANDSCAPING	GM	1.523	$ 75,000.00	$ 114,225.00
LANDSCAPING FOR PROP. SAFETY MEASURE #3 FROM SILVER STAR RD TO BONNIE BRAE CIR					
	STANDARD COUNTY LANDSCAPING	GM	0.659	$ 75,000.00	$ 49,425.00
LANDSCAPING FOR PROP. SAFETY MEASURE #4 FROM STATE RD 50 TO SILVER STAR RD					
	STANDARD COUNTY LANDSCAPING	GM	1.523	$ 75,000.00	$ 114,225.00

Engineer's Estimate

PROPOSED SAFETY MEASURE #6 - LANDSCAPING (ENHANCED)

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
LANDSCAPING FOR PROP. SAFETY MEASURE #2 FROM STATE RD 50 TO SILVER STAR RD					
	Sod	SY	7961	$ 3.00	$ 23,883.00
	Shrubs	SY	7961	$ 3.00	$ 23,883.00
	Crape Myrtle	EA	138	$ 650.00	$ 89,700.00
LANDSCAPING FOR PROP. SAFETY MEASURE #3 FROM SILVER STAR RD TO BONNIE BRAE CIR					
	Sod	SY	2499	$ 3.00	$ 10,118.93
	Shrubs	SY	2499	$ 3.00	$ 10,118.93
	Crape Myrtle	EA	45	$ 650.00	$ 39,487.50
LANDSCAPING FOR PROP. SAFETY MEASURE #4 FROM STATE RD 50 TO SILVER STAR RD					
	Sod	SY	9100	$ 3.00	$ 27,300.00
	Shrubs	SY	9100	$ 3.00	$ 27,300.00
	Crape Myrtle	EA	414	$ 650.00	$ 269,100.00

Engineer's Estimate

PROPOSED SAFETY MEASURE #7 - PEDESTRIAN FENCING

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
PEDESTRIAN FENCING FOR PROP. SAFETY MEASURE #2 FROM STATE RD 50 TO SILVER STAR RD					
	PEDESTRIAN FENCING	LF	5559	$ 6.99	$ 38,857.41
PEDESTRIAN FENCING FOR PROP. SAFETY MEASURE #3 FROM SILVER STAR RD TO BONNIE BRAE CIR					
	PEDESTRIAN FENCING	LF	3473	$ 6.99	$ 24,276.27
PEDESTRIAN FENCING FOR PROP. SAFETY MEASURE #4 FROM STATE RD 50 TO SILVER STAR RD					
	PEDESTRIAN FENCING	LF	4560	$ 6.99	$ 31,874.40

Engineer's Estimate

PROPOSED SAFETY MEASURE #9 - SILVER STAR ROAD IMPROVEMENTS

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
SILVER STAR ROAD IMPROVEMENTS					
	DEMO EXISTING CROSSWALK AND STRIPING	AL	1	$ 30,000.00	$ 30,000.00
	DEMO CONCRETE WALK	SY	268	$ 17.00	$ 4,556.00
	DEMO EXISTING CURB	LF	240	$ 22.00	$ 5,280.00
	DEMO EXISTING CONCRETE - SILVER STAR MEDIAN WEST OF PINE HILLS RD	SY	235	$ 20.00	$ 4,700.00
	BACK FILL, STABILIZATION BASE	SY	400	$ 12.00	$ 4,800.00
	TYPE 'F' CURB	LF	140	$ 20.00	$ 2,800.00
	RIBBON CURB FOR TREE GRATE FRAME	LF	840	$ 20.00	$ 16,800.00
	COLOR CONCRETE PDESTRIAN LANDINGS AT CURB RETURNS	SF	400	$ 20.00	$ 8,000.00
	CROSSWALK (STS AND THERMOPLASTIC STRIPES)	SF	7200	$ 8.50	$ 61,200.00
	HANDICAP RAMPS	EA	8	$ 900.00	$ 7,200.00

Engineer's Estimate

PROPOSED SAFETY MEASURE #10 - ADJUSTMENTS TO LYNX BUS STOPS

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
PEDESTRIAN FENCING FOR PROP. SAFETY MEASURE #2 FROM STATE RD 50 TO SILVER STAR RD					
	RELOCATE EXISTING STOPS	EA	15	$ 350.00	$ 5,250.00
	RELOCATE EXISTING STOP WITH SHELTER	EA	1	$ 10,000.00	$ 10,000.00
PEDESTRIAN FENCING FOR PROP. SAFETY MEASURE #3 FROM SILVER STAR RD TO BONNIE BRAE CIR					
	RELOCATE EXISTING STOPS	EA	13	$ 350.00	$ 4,550.00
PEDESTRIAN FENCING FOR PROP. SAFETY MEASURE #4 FROM STATE RD 50 TO SILVER STAR RD					
	RELOCATE EXISTING STOPS	EA	15	$ 350.00	$ 5,250.00
	RELOCATE EXISTING STOP WITH SHELTER	EA	1	$ 10,000.00	$ 10,000.00

Engineer's Estimate

PROPOSED SAFETY MEASURE #11 - CONSTRUCT 12' MULTI USE PATH FROM SILVER STAR RD. TO BONNIE BRAE CIR.

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
CONSTRUCT 12' MULTI USE PATH					
0110 4 10	REMOVAL OF EXISTING PAVEMENT (SIDEWALK)	SY	3725	$ 19.22	$ 71,594.50
0522 1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK	SY	8940	$ 34.41	$ 307,625.40

Engineer's Estimate

PROPOSED SAFETY MEASURE #12 - RAPID RECTANGULAR FLASHING BEACONS

PAY ITEM #	ITEM DESCRIPTION	UNIT	QUANTITY	UNIT COST	ESTIMATED TOTAL COST
RRFB FOR PROP. SAFETY MEASURE #2 FROM STATE RD 50 TO SILVER STAR RD					
632 7 1	SIGNAL CABLE	PI	1	$ 4,503.00	$ 4,503.00
639 1 122	ELECTRICAL POWER SYSTEM	AS	1	$ 3,320.00	$ 3,320.00
639 2 1	ELECTRICAL SERVICE WIRE	LF	300	$ 4.78	$ 1,434.00
646 1 12	ALUMINUM SIGNAL POLE	EA	2	$ 850.00	$ 1,700.00
653 1 11	PED SIGNAL	AS	2	$ 620.00	$ 1,240.00
654 2 12	RRFB, AC POWERED	AS	1	$ 10,500.00	$ 10,500.00
654 2 11	RRFB, AC POWERED, SINGLE DIR	AS	1	$ 14,000.00	$ 14,000.00
665 1 11	PEDESTRIAN DETECTOR	EA	2	$ 221.00	$ 442.00
	SUBTOTAL FOR EACH RRFB				$ 37,139.00
	TOTAL RRFB	EA	5	$ 37,139.00	$ 185,695.00
RRFB FOR PROP. SAFETY MEASURE #3 FROM SILVER STAR RD TO BONNIE BRAE CIR					
632 7 1	SIGNAL CABLE	PI	1	$ 4,503.00	$ 4,503.00
639 1 122	ELECTRICAL POWER SYSTEM	AS	1	$ 3,320.00	$ 3,320.00
639 2 1	ELECTRICAL SERVICE WIRE	LF	300	$ 4.78	$ 1,434.00
646 1 12	ALUMINUM SIGNAL POLE	EA	2	$ 850.00	$ 1,700.00
653 1 11	PED SIGNAL	AS	2	$ 620.00	$ 1,240.00
654 2 12	RRFB, AC POWERED	AS	1	$ 10,500.00	$ 10,500.00
654 2 11	RRFB, AC POWERED, SINGLE DIR	AS	1	$ 14,000.00	$ 14,000.00
665 1 11	PEDESTRIAN DETECTOR	EA	2	$ 221.00	$ 442.00
	SUBTOTAL FOR EACH RRFB				$ 37,139.00
	TOTAL RRFB	EA	4	$ 37,139.00	$ 148,556.00
RRFB FOR PROP. SAFETY MEASURE #4 FROM STATE RD 50 TO SILVER STAR RD					
632 7 1	SIGNAL CABLE	PI	1	$ 4,503.00	$ 4,503.00
639 1 122	ELECTRICAL POWER SYSTEM	AS	1	$ 3,320.00	$ 3,320.00
639 2 1	ELECTRICAL SERVICE WIRE	LF	300	$ 4.78	$ 1,434.00
646 1 12	ALUMINUM SIGNAL POLE	EA	2	$ 850.00	$ 1,700.00
653 1 11	PED SIGNAL	AS	2	$ 620.00	$ 1,240.00
654 2 12	RRFB, AC POWERED	AS	1	$ 10,500.00	$ 10,500.00
654 2 11	RRFB, AC POWERED, SINGLE DIR	AS	1	$ 14,000.00	$ 14,000.00
665 1 11	PEDESTRIAN DETECTOR	EA	2	$ 221.00	$ 442.00
	SUBTOTAL FOR EACH RRFB				$ 37,139.00
	TOTAL RRFB	EA	5	$ 37,139.00	$ 185,695.00

APPENDIX F-3

TECHNICAL MEMORANDUM 6: SAFETY IMPROVEMENT STRATEGIES REPORT

Benefit/Costs and CMF/CRFs

Appendix C: Benefit / Costs and CMF/CRFs

To filter: Select X from the drop-down arrows:

Crash Reduction Factors (as of 02/14/2014)
Florida Department of Transportation

Note: Use of CRFs based on less than 5 projects (Column C) are not recommended for use in B/C analysis. Positive CRFs imply reduced crashes. Negative CRFs imply increased crashes.

ID	Improvement	Potential Controlling Criteria Application														Number of Projects	Total	Fatal	Injury	PDO	Urban	Rural	Night	Day	Rear-End	Angle	Left-Turn	Right-Turn	Sideswipe	Fixed-Object	Head-On	Pedestrian	Ran-Off-Road	Wet Surface
		DS	LW	SW	BW	HA	SE	VA	G	SSD	CS	VC	HC	SC	Other																			
1	New signal at channelized intersection									x						31	12	15	20	-1	13	7	4	16	-51	53	16	70	10	-40	53	-90	-90	20
2	New signal at non-channelized intersection									x						11	15	58	15	14	20	-27	21	13	-5	11	34	23	23	51	-46	13	26	11
3	Add signal and channelization									x						19	19	-8	25	13	17	21	-41	31	-8	40	50	26	-16	-3	48	58	51	34
4	Modify signal at channelized intersection									x						7	11		31	-18	11		-13	18	29	20	17	7	-4	-272	-272	7	-86	22
5	Modify signal at non-channelized intersection									x						2	-99	-23	-118	-85	38	-141	-126	-73	-48	-94	-188	100	-23	38				-48
6	Modify both signal and channelization									x						15	24	50	33	13	25	-20	7	29	6	30	66	-4	4	4	-59	34	-164	33
7	Modify signal and add channelization									x						10	28	-87	27	29	28	30	-1	35	11	37	49	25	-42	-20	-87		38	-17
8	Remove signal														x	0																		
9	Add flashing warning signal (signalization)					x		x		x						4	-2	100	-37	28		-2	59	-22	80	-30	-117	100	-63	100			100	46
10	Interconnect traffic signals	x														0																		
11	New LT channelization w/ LT phase (signalized)	x														9	17	59	36	-9	16	44	16	19	5	16	50	-42	12	-1	15	29	68	18
12	New LT channelization w/o LT phase (signalized)	x														10	31	79	35	26	31	39	33	30	18	46	61	42	39	-26	38	41	12	49
13	New LT channelization (nonsignalized intersection)	x														46	3	61	9	-6	-6	20	-26	9	-5	7	24	42	1	-19	-26	6	0	21
14	**Modify intersection at signalized intersection**					**x**				**x**			**x**			**28**	**6**	**-24**	**13**	**0**	**5**	**78**	**1**	**8**	**7**	**10**	**28**	**11**	**3**	**21**	**-9**	**16**	**24**	**18**
15	Modify intersection at non-signalized intersection					x				x			x			5	18	66	32	6	18	100	13	15	10	25	59	43	31	-53	39	-2	-2	17
16	Modify channelization and add signal		x	x												2	22		21	22	22		-131	18	11	16	39	33	-6	58	-68	16	-26	5
17	Increase storage lane														x	8	11	-76	15	9	20	-10	-9	17	0	8	15	-36	7	1	-68	17	-6	17
18	Add turn bay		x	x				x		x						8	10	52	16	-1	10	10	1	11	5	6	21	36	20	-222	-190		36	48
19	Add right turn	x	x	x												8	9	67	9	8	0	52	-6	3	11	16	37	1	-20	-39	-33	-49	100	16
20	Add LT (T-intersection)	x	x	x												3	42	9	56	31	42	43	-39	61	37	84	84	-81	55	-55	100		48	-81
21	Add LT (Y-intersection)	x	x	x												1	42	-118	53	31	42		24	56	52	48	84	46	17	32	69	-118	27	64
22	Add 2nd LT lane in same direction as existing		x	x											x	15	4	0	13	-3	1	92	0	2	1	22	30	45	-33	28	-135	-25	13	15
23	Guardrail at bridges end				x								x			0																		
24	Guardrail at steep embankments		x	x									x			3	-5	-3	3	-16	-2	-19	-63	2	3	-184	-55		74	-120	100		5	-9
25	Guardrail at steep embankments with curve		x	x			x						x			1	-256		-78			-256		-167					100					11
26	Guardrail at roadside obstacles (piers, sign posts, poles, etc.)		x	x									x			1	52		60	37	52		27	62	44	100			68	37	100	100		54
27	Guardrail end treatments		x	x									x			0																		
28	Guardrail relocation		x	x									x			0																		
29	Guardrail removal		x	x									x			0																		
30	Add painted median		x	x											x	2	43	78	43	40		43	-273	25	33	14	68	66	62	-72	57	83	-15	39
31	**Add raised median**		**x**	**x**											**x**	**18**	**20**	**38**	**19**	**20**	**20**		**22**	**19**	**2**	**29**	**48**	**23**	**41**	**-2**	**45**	**22**	**-37**	**27**
32	Increase median width		x	x									x			4	-2	-12	0	-3	-10	100	-19	3	3	-43	5	3	-28	30	-699	-224	60	45
33	Add two-way LT lanes	x	x	x												12	41	35	45	39	40	44	33	44	58	32	36	32	38	34	18	-24	27	24
34	Install concrete median barrier		x	x									x			1	-37	56	-27	-46	-37		-71	-36	-46	-407	56	94	29	-112	9	-58	-73	-48
35	Install double sided guardrail on wider median		x	x									x			12	-16	33	1	-38	-29	1	-15	-17	3	-4	2		19	-83	61	-96	28	-54
36	Install attenuator type (IBC) barrier			x	x								x			0																		
37	Upgrade to concrete median barrier			x	x								x			0																		
38	Upgrade to attenuator barrier			x	x								x			0																		
39	Pavement deslicking										x	x				4	-3	-30	-13	2	-2	-20	-34	3	17	-24	-7	8	-43	8	-399	35	-127	30
40	Skid Hazard overlay										x	x				95	-6	-53	-5	-6	-5	-19	-11	-3	2	-35	0	5	-11	-9	-19	-13	-7	18
41	Pavement grooving										x	x				0																		
42	Eliminate parking		x	x						x				x		4	12	100	11	12	12		8	13	2	29	32	46	25	14	13	63		26
43	Change two-way operation to one-way		x	x												0																		
44	Prohibit turns									x						2	-190	100	-99	-309	-190		-43	-360	-198	-138				-19	-19	-19		-99
45	Modify speed limit (increase or decrease)	x					x	x		x				x		1	52	56	50	53		52		54	-18	75	85		71	56			100	78
46	Delineation of right edge lines		x	x												0																		
47	Delineation of painted median edge lines		x	x												1	-76		-18	-155	-76		-65	-85	-85	7	-85		31	-410				
48	Centerline striping		x													0																		
49	Delineation of no passing stripes		x			x		x		x						0																		
50	Delineation of reflectorized guide markers		x	x		x										0																		
51	Delineation of reflectorized raised pavement markers (center line)		x			x										1	10	23	11	5		21	16	3	7	7	-62	100	81	-36	38	100	25	7
52	Delineation of general pavement markings (stop bar, ped. crossing, code 46-51)		x	x						x						0																		
53	Delineation of guide posts on curves					x	x									0																		
54	Intersection delineation		x			x				x						0																		
55	Curve warning Signing	x				x	x									2	35		6	49	44	-306	56	21	72	-2	32		49	49	-2			-19

ID	Improvement	Potential Controlling Criteria Application														Number of Projects	Total	Fatal	Injury	PDO	Urban	Rural	Night	Day	Rear-End	Angle	Left-Turn	Right-Turn	Sideswipe	Fixed-Object	Head-On	Pedestrian	Ran-Off-Road	Wet Surface
		DS	LW	SW	BW	HA	SE	VA	G	SSD	CS	VC	HC	SC	Other																			
56	Chevrons Signing	x				x	x									1	30		12	63		30	-120	78	-120		100		100	-65	100	100	45	-120
57	All-way stops Signing									x						0																		
58	Overhead directional (where to turn) Signing														x	3	-7	100	-9	-5	-7		-17	-4	-15	16	9	41	14	-13	-383	-45		-11
59	Roadside directional (where to turn) Signing														x	0																		
60	Overhead lane designation Signing														x	0																		
61	Minor leg stop control Signing					x				x						0																		
62	Yield sign					x				x						0																		
63	Advanced warning signs				x	x	x	x	x	x		x		x	x	1	60		60			60		60			100							
64	Intersection directional or warning signs					x									x	0																		
65	**New roadway segment lighting**							**x**		**x**			**x**			**58**	**2**	**23**	**10**	**-9**	**2**	**26**	**14**	**-5**	**-2**	**-4**	**25**	**20**	**1**	**-16**	**-11**	**33**	**16**	**6**
66	Upgrade roadway segment lighting							x		x			x			7	-12	15	-11	-14	-12	100	0	-18	-22	-27	23	57	-1	-8	-39	-1	12	0
67	New lighting at intersection							x		x			x			9	-2	5	-11	8	-4	-1	31	-15	-30	-15	9	41	12	24	-42	-279	41	-26
68	Upgrade lighting at intersection							x		x			x			0																		
70	Bridge approach lighting			x	x								x			1	9		-5	21		9		32	-42				62	37			-26	24
71	Underpass lighting											x				0																		
72	Intersection flashers four leg red-yellow					x				x						2	-59			100		-59		36		-91	52							
73	Intersection flashers three leg red-yellow					x				x						0																		
74	Intersection flashers four way red					x				x						0																		-105
76	Advanced warning flashers (curve & intersection)					x	x			x						1																		
77	Install flashing warning signal (flashing beacon)					x				x						5	-29		-65	-12	-52	23	-111	-11	-80	-55	6	48	11	-48	100		29	-46
78	Obstacle Removal/Hazard Mitigation												x			5	25	28	37	5	26	19	33	19	22	37	44	14	4	19	6	-38	61	28
79	Relocate obstacle 30 feet from road												x			0																		
80	Convert to breakaway												x			0																		
81	Cushion attenuators												x			0																		
82	Install guardrail			x	x								x			9	-38	43	-9	-77	-57	16	-44	-37	-19	-37	19	100	-32	-82	-49	27	-6	-67
83	Upgrade substandard bridgerail			x	x								x			1	25		100	-125	25		100	-12						-12				
84	Realignment					x		x		x						3	60	50	71	50	-50	100	33	60	57	100	100			-200				0
85	Superelevation					x	x									1																		
86	Modify/Close median openings	x								x						27	18	40	26	9	18	92	6	21	6	29	58	25	11	-18	-46	-25	45	20
87	Relocate drives						x			x					x	0																		
88	Curtail turning movements									x					x	0																		
89	Increase radii at intersection					x				x						2	38	100	16	58		57	21	44	-5	48	-5					100		-109
90	Widen travel way		x				x									2	-52	27	-31	-66		-2	-149	-40	7	-56	-136	-164	-27	-10	45	-10	-147	-65
91	Widen shoulder			x						x						1	-9	26	-11	-11		16	-845	-18	5	-178	-48	-233	72	-39	-48		-78	1
92	Add 4 foot shoulders (bike lane)			x												1	.		15	3	6		-95	17	-15	-37	57	59	51	-173			67	-18
93	Construct grade separation					x		x		x					x	0																		
94	Widen bridge (min. of 6 feet)		x	x	x											5	55	-39	19	73	-39	65	7	61	48	-109	54	100	69	51	30	30	79	25
95	Reconstruct road & shoulders		x	x			x		x							10	-11	-99	-13	-8	-23	66	-41	-2	-1	-51	-9	9	-10	-35	-43	-29	-73	12
96	Reconstruct curve					x	x									3	42	100	53	43	40	54	28	53	23	27	58	100	78	48	100	17	64	27
97	Construct interchange					x		x		x						1	-60	100	-188	-24		100	100	-99	-61				-13	-50			25	-126
98	Lengthen accel/decel lanes	x								x						1																		
99	Extend drop lane	x								x						0																		
100	Install rumble strips		x	x	x	x	x			x						9	22	50	19	22	4	23	38	7	0	14	17	-56	48	4	36	-56	46	20
101	Flatten side slopes			x									x			0																		
102	Install Accel/Decel lane	x								x						2	20	100	9	8		20	52	10	39	22	-7		46			100	57	-115
103	Upgrade signal and add pedestrian feature									x					x	17	-5	10	16	-20	-5		-7	-7	-20	-20	19	-9	0	19	-78	0	37	-2
104	Sight distance improvements					x				x						3	25	-93	38	10	24	25	61	4	13	49	81		52	100				4
105	Minor structures replaced or improved for safety												x	x		1	14		32	-23	14		23	5	3	22	45	56	-14	56	100	-17		-86
106	Lanes added to travel way		x	x												4	13	69	18	5	13		26	5	-2	35	72	6	-15	-26	-214	-183	53	6
107	Upgraded guardrail			x	x								x			1	-22	-46	-16	-33	2	-44	8	-44	-25	-7	-155	-292	29	-85	-370	74	-10	-1
108	Sidewalk construction														x	15	-11	-9	1	-29	-11		2	-19	-16	-11	14	3	-34	-2	43	15	-15	1
109	Over/Under passes for pedestrians and/or bicycles														x	2	37		7	67	37		31	35	20	100			57		13			48
110	**Fencing or other pedestrian barriers**												**x**		**x**	**2**	**-4**	**100**	**11**	**-43**	**-4**		**-61**	**4**	**3**	**10**	**27**	**100**	**-107**	**-12**	**3**	**-45**		**1**
111	Ramps on existing curbs														x	0																		
112	New bikeway/multi-use path construction														x	0																		
113	Bicycle non-construction improvements														x	0																		
114	Impact Attenuators			x	x								x			3	2		16	-27	2		-14	4	-3	-14	45	-36	26	-70	-2	-2	74	2
115	Signing and Pavement Markings		x	x	x		x				x					11	11	1	11	11	11	6	0	13	10	5	20	4	-21	13	23	-14	8	15
116	Install Traffic Calming Features	x														2	8	100	3	-16	8		13	20	42	36			42	-132	100		71	42
117	Add paved shoulders			x			x				x					21	5	-6	12	-9	8	2	9	2	-1	-5	22	40	11	-2	-2	24	4	19

ID	Improvement	Potential Controlling Criteria Application														Number of Projects	Total	Fatal	Injury	PDO	Urban	Rural	Night	Day	Rear-End	Angle	Left-Turn	Right-Turn	Sideswipe	Fixed-Object	Head-On	Pedestrian	Ran-Off-Road	Wet Surface
		DS	LW	SW	BW	HA	SE	VA	G	SSD	CS	VC	HC	SC	Other																			
118	Add turn lane/s & pavement resurfacing		x	x			x				x					***6***	35	3	47	21	35		45	31	49	20	53	51	-15	3	51	3	-46	33
119	Reconstruct bicycle/multi-use path														x	1	37	100	40	33	37		64	24	17	38	52	4	61	36	52			71
120	Construct median, add signal, & pavmnt.resurfacing		x	x			x				x					4	9	-104	34	-30	9		-6	13	31	4	22	-53	-55	-13	32		100	33
121	Reconstruct median/median improvments		x	x												***16***	-14	56	-6	-27	-25	40	0	-19	-31	-57	14	13	-27	-5	-10	-26	26	-23
122	Construct LT and RT lanes		x	x												***5***	-8	-7	-4	-12	-12	39	5	-8	-1	-76	11	-22	-107	5	-114	20	47	19
123	Paved shoulders & rumble strips		x	x			x				x					3	3	69	8	-17	-79	51	-1	11	-38	-57	62	65	-5	-10	25	100	5	24
124	Upgrade traffic signal									x		x			x	3	16		21	12	16		20	11	34	14	-27	-45	-31	30	-24	31		35
125	Traffic signals, guardrail, signing & lighting									x			x		x	0																		
126	Traffic signals, resurfacing, turn lanes, lighting		x	x				x					x			4	-51	100	-27	-87	-36	-158	-105	-48	-52	-32	-47	-67	-80	-128	-42	-24	29	-37
127	Resurface, guardrail, signing & pavt. markings		x	x			x				x		x			1	-23		25	-161	-23		-112	2	-71	16	76			100			-96	-96
128	Add Ped crossing mid-block with signals														x	3	-23	-93	-21	-24	-23		-25	-16	-60	-19		-286	4	4		52		-148
129	Add Ped crossing mid-block without signals														x	1	-52	-46	-27	-108	-52		-37	-58	-70	-22	19	-191	-154	-240	-122	-73	100	-37
130	Add roundabout to intersection	x			x					x						2	46	100	58	32	46		41	47	65	17	76	-90	44	5	-1607	-8	100	66
131	Convert shldr inverted rumble to audible edgeline			x												0																		
132	New inverted AUDIBLE marking on CL or edgeline		x	x		x	x				x					***12***	6	4	14	-6	-5	11	3	9	-19	18	35	21	55	15	17	15	40	4
133	Use of ITS safety system device(s)														x	1	-16		52	-42	-16		-3	-8	-267	31	-3	-106	-158	-3	83	100		-106
134	High friction surface treatment (tyregrip, etc.)					x	x		x		x					1																		
135	Modify signal timing and phasing	x													x	2	14		30	-1	14		-9	20	-22	31	66	-20	-17	33	100	-141		36

1. Source of Crash Data: The Department of Highway Safety and Motor Vehicles (DHSMV) is the official custodian of the crash reports. The numbers that DHSMV reports are the official numbers. The Florida Department of Transportation (FDOT) Safety Office maintains its own database with crash data obtained from DHSMV, and conducts analyses based on this data for internal FDOT purposes.

2. Use Restrictions: The information on the Traffic Safety Web Portal has been compiled from information collected for the purpose of identifying, evaluating or planning safety enhancements. It is used to develop highway safety construction improvements projects which may be implemented utilizing Federal Aid Highway funds. Any document displaying this notice shall be used only for the purposes deemed appropriate by the Florida Department of Transportation. See Title 23, United States Code, Section 409.

3. Crash Reduction Factors Parameters - ID: 465, From Year: Any Year, To Year: 2009, Before Month: 36, Min. Before Month: 12, After Month: 36, Min. After Month: 12

DS - Design Speed
LW - Lane Width
SW - Shoulder Width
BW - Bridge Width
HA - Horizontal Alignment
SE - Superelevation
VA - Vertical Alignment
G - Grade
SSD - Stopping Sight Distance
CS - Cross Slope
VC - Vertical Clearance
HC - Horizontal Clearance
SC - Structural Capacity

PINE HILLS ROAD PEDESTRIAN BICYCLE SAFETY STUDY
SUMMARY OF SAFETY IMPROVEMENTS COSTS

SAFETY IMPROVEMENT	ESTIMATED CONSTR COSTS
Lighting - Colonial Drive to Silver Star Road	$ 1,082,369
Raised Median (23') - Colonial Drive to Silver Star Road	$ 1,438,545
Raised Median (16') - Silver Star Road to Bonnie Brae Crc	$ 1,402,275
Raised Median (16') - Colonial Drive to Silver Star Road	$ 3,006,093
Landscaping (County Standard - $75,000/Mile) Colonial Drive to Bonnie Brae Circle	$ 212,745
Landscaping (Enhanced) Colonial Drive to Bonnie Brae Circle	$ 236,219
Pedestrian Fencing Colonial Drive to Bonnie Brae Circle	$ 82,074
Reduce Travel Lanes to 11' Wide	Cost Included in Median Changes
Silver Star Road Improvements	$ 188,937
Changes to LYNX Bus Stops	$ 39,650
Reconstruct/Widen Existing Sidewalk North of Silver Star Road to 12' Mult-Use Path	$ 492,986
Rapid Rectangular Flashing Beacons (9 Locations)	$ 434,526
Pedestrian Educational Programs	No Cost

Daniel Kins

RECOMMENDED SAFETY IMPROVEMENTS INITIATIVES OR COMBINATIONS

Option	Safety Improvement (s)	ESTIMATED CONSTR COSTS	B/C
Option 1	**Lighting - Colonial Drive to Silver Star Road**	$ 1,082,369	4.12
Option 2	**Colonial Drive to North of Silver Star Road**		
	- Raised Median, Reduced Travel Lanes	$ 1,438,545	11.84
	- Std Landscaping	$ 148,493	12.81
	- ENHANCED Landscaping	$ 178,706	12.57
	- Silver Star Intersection	$ 188,937	7.61
	- Pedestrian Fencing	$ 50,515	13.79
	- Pedestrian Fencing w/ ELS	$ 50,515	13.54
	- Changes to LYNX Stops	$ 19,825	19.11
	- RRFB	$ 48,281	3.28
	- Pedestrian Education	$ -	
	TOTAL	**$ 2,087,718**	
Option 3	**North of Silver Star Road to Bonnie Brae Circle**		
	- Raised Median, Reduced Travel Lanes	$ 1,402,275	7.19
	- Std Landscaping	$ 64,253	8.28
	- ENHANCED Landscaping	$ 77,643	8.20
	- Reconstruct/Widen Sidewalk	$ 492,986	15.34
	- Pedestrian Fencing	$ 31,559	8.67
	- Pedestrian Fencing w/ ELS	$ 31,559	8.59
	- Changes to LYNX Stops	$ 5,915	64.04
	- RRFB	$ 48,281	3.28
	- Pedestrian Education	$ -	
	TOTAL	**$ 2,190,110**	

CRASH COUNTERMEASURE CRASH COUNTS

Crash Based	**Yes**		
		Begin Point	**SR 50**
		End Point	**Silver Star Road**
Submitted By	**TP**		
Project No.	**8414-16**	County	**Orange**

Number of Crashes

	Total	Fatal	Incapacitating Injury	Non-Incapacitating Injury	PDO
Crash Types					
Angle	16	2	10	2	2
Rear End	31		24	4	3
Head On	4		4		
Left Turn	25		21		4
Off Road	63		13	2	48
Right Turn	0				
Rollover	1		1		
Sideswipe	4	1	3		
Pedestrian	16	1	14		1
Bicycle	18		5		13
Unknown	0				
Other	6		5	1	
Single Vehicle	9	1	1		7
Parked Vehicle	3		1	1	1
Animal	2			1	1
Backed Into	1		1		
Left Rear	4		4		
Right/Left	3		2	1	
Total	206	5	109	12	80

Night Time Crash Data

Injury Total	Lighting Condition
	Dark
Fatalities	2
Incapacitating Injury	42
Non-Incapacitating Injury	4
PDO	29
Total	77
Percent of Total	37.38%

Crashes that occured during dark-lighted conditions were counted to use in the B/C analysis for Option 1

CRASH COUNTERMEASURE EXTRA CALCULATIONS

Crash Based	**Yes**			
			Begin Point	**SR 50 Silver Star**
Submitted By	**TP**		End Point	**Road**
Project No.	**8414-16**	County	**Orange**	

Additional Calculations

Calculation for CRF Value for Landscaping from Multiple Specific CMFs

TITLE	Landscaping CMF	Number Crashes	Crashes After Improvement	Weighted CMF
EQUATION		Sum of Category	CMF*Num Crash	sum of crashes after improvement / total crashes
Injury CMF	0.94	126	118.44	**0.95**
PDO CMF	0.97	80	77.6	

CRF USED FOR CALCULATIONS	= 1-CMF
CRF	**0.05**

Calculation for CRF Value for ENHANCED Landscaping from Multiple Specific CMFs

TITLE	Enhanced Landscaping CMF	Number Crashes	Crashes After Improvement	Weighted CMF
EQUATION		Sum of Category	CMF*Num Crash	sum of crashes after improvement / total crashes
Injury CMF	0.94	126	118.44	**0.95**
PDO CMF	0.97	80	77.6	

CRF USED FOR CALCULATIONS	= 1-CMF
CRF	**0.05**

Calculation of CMF value for Fencing for Pedestrians (Ped)

TITLE	Ped CMF	% Ped Crashes		Weighted CMRF
EQUATION		sum ped crashes / total crashes		1- (Ped CMF * % Ped Crashes)
CMF for all	0.45	7.77%		0.03

Calculation of CRF value for Moving Transit Stops

TITLE	Ped CMFs	Number Crashes	Crashes After Improvement	Weighted CMF
EQUATION		Sum of Category	CMF*Num Crash	sum of crashes after improvement / total crashes
CMF1	0.848		0.848	0.01
CMF2	0.45	1	0.45	

CRF USED FOR CALCULATIONS	= 1-CMF

	CRF	**0.99**	

CRASH COUNTERMEASURE CRASH COUNTS

Crash Based	**Yes**			
			Begin Point	**Silver Star Road**
			End Point	Bonnie Brae Circle
Submitted By	**TP**			
Project No.	**8414-16**	County	**Orange**	

Number of Crashes

	Total	Fatal	Incapacitating Injury	Non-Incapacitating Injury	PDO
Crash Types					
Angle	6	0	5	0	1
Rear End	33	0	27	4	2
Head On	3	2	1	0	0
Left Turn	28	1	21	2	4
Off Road	21	0	3	0	18
Right Turn	1	0		0	1
Rollover	0	0		0	0
Sideswipe	2	0	1	0	1
Pedestrian	6	3	3	0	0
Bicycle	9	0	2	0	7
Unknown	0	0		0	0
Other	9	0	9	0	0
Single Vehicle	4	0	1	0	3
Parked Vehicle	0	0	0	0	0
Total	122	6	73	6	37

Night Time Crash Data

Injury Total	Lighting Condition
	Dark
Fatalities	4
Incapacitating Injury	15
Non-Incapacitating Injury	3
PDO	12
Total	34
Percent of Total	27.87%

Crashes that occured during dark-lighted conditions were counted to use in the B/C analysis for Option 1

Additional Calculations

NOTE FOR CRF OF THE WIDEN SIDEWALK OPTION

The CRF chosen for the widening of the sidewalk is 0.15 based on FDOT CRF spreadsheet used in reference for this project.

CRF
0.15

CRASH COUNTERMEASURE EXTRA CALCULATIONS

Crash Based	**Yes**			
			Begin Point	**SR 50**
Submitted By	**TP**		End Point	**Silver Star Road**
Project No.	**8414-16**	County	**Orange**	

Additional Calculations

Calculation for CRF Value for Landscaping from Multiple Specific CMFs

TITLE	Landscaping CMF	Number Crashes	Crashes After Improvement	Weighted CMF
EQUATION		Sum of Category	CMF*Num Crash	sum of crashes after improvement / total crashes
Injury CMF	0.94	85	79.9	**0.95**
PDO CMF	0.97	37	35.89	

CRF USED FOR CALCULATIONS	= 1-CMF
CRF	**0.05**

Calculation for CRF Value for ENHANCED Landscaping from Multiple Specific CMFs

TITLE	Enhanced Landscaping CMF	Number Crashes	Crashes After Improvement	Weighted CMF
EQUATION		Sum of Category	CMF*Num Crash	sum of crashes after improvement / total crashes
Injury CMF	0.94	85	79.9	**0.95**
PDO CMF	0.97	37	35.89	

CRF USED FOR CALCULATIONS	= 1-CMF
CRF	**0.05**

Calculation of CMF value for Fencing for Pedestrians (Ped)

TITLE	Ped CMF	% Ped Crashes		Weighted CrF
EQUATION		sum ped crashes / total crashes		1- (Ped CMF * % Ped Crashes)
CMF for all	0.45	4.92%		0.02

Calculation of CRF value for Moving Transit Stops

TITLE	Ped CMFs	Number Crashes	Crashes After Improvement	Weighted CMF
EQUATION		Sum of Category	CMF*Num Crash	sum of crashes after improvement / total crashes
CMF1	0.848		0.848	0.01
CMF2	0.45	1	0.45	

CRF USED FOR CALCULATIONS	= 1-CMF
CRF	**0.99**

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Pine Ridge Road South of Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Install Lighting**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Capital Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway		20	0.0736	$0.00
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$1,082,369.00	20	0.0736	$79,662.36
Sub-Total	$1,082,369.00			$79,662.36
			Annual Cost =	$79,662.36

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	14.00%
# of Correctable Crashes, PC =	77	Intsall Lighting	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	15.40		
Crash Reduction Factor =	0.14	Additional CRF (%) =	
CMF * (PC/YD) =	2.16		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$327,934.07		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$327{,}934.07}{\$79{,}662.36} = 4.12$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width)**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,438,545.39	20	0.0736	$105,876.94
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other		20	0.0736	$0.00
Sub-Total	$1,438,545.39			$105,876.94
			Annual Cost:	$105,876.94

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	206	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	41.20		
Crash Reduction Factor =	0.20	Additional CRF (%) =	
CMF * (PC/YD) =	8.24		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$1,253,328.72		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$1,253,328.72}{\$105,876.94} = 11.84$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District :	**Five**	County:	**Orange**	Date Prepared:	**12-Jul-17**

Location: **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width) and Landscaping**

ANNUAL COST OF IMPROVEMENTS

Type	**Cost**	**Service Life**	**Cap. Recovery Factor**	**Total**
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,438,545.39	20	0.0736	$105,876.94
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$148,492.50	20	0.0736	$10,929.05
Sub-Total	$1,587,037.89			$116,805.99
			Annual Cost:	$116,805.99

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	206	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	4.83%
PC/YD =	41.20	Landscaping	
Crash Reduction Factor =	0.24	Additional CRF (%) =	
CMF * (PC/YD) =	9.83		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$1,495,720.06		

BENEFIT/COST RATIO

Benefit	=	$1,495,720.06	=	12.81
Cost		$116,805.99		

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width), landscaping, and pedestrian fence**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,438,545.39	20	0.0736	$105,876.94
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$199,007.13	20	0.0736	$14,646.92
Sub-Total	$1,637,552.52			$120,523.87
			Annual Cost:	$120,523.87

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	206	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	4.83%
PC/YD =	41.20	Landscaping	
Crash Reduction Factor =	0.27	Additional CRF (%) =	3.50%
CMF * (PC/YD) =	10.93	Ped Fence* weighted for ped	
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$1,662,470.79		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$1,662,470.79}{\$120,523.87} = 13.79$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District **Five** County: **Orar** Date Prepared: **12-Jul-17**

Locatior **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width) and Enhanced Landscaping**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,438,545.39	20	0.0736	$105,876.94
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$178,705.80	20	0.0736	$13,152.75
Sub-Total	$1,617,251.19			$119,029.69
			Annual Cost:	$119,029.69

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	206	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	4.83%
PC/YD =	41.20	Enhanced Landscaping	
Crash Reduction Factor =	0.24	Additional CRF (%) =	
CMF * (PC/YD) =	9.83		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$1,495,720.06		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$1,495,720.06}{\$119,029.69} = 12.57$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width), enhanced landscaping, and pedestrian fence**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,438,545.39	20	0.0736	$105,876.94
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$229,220.43	20	0.0736	$16,870.62
Sub-Total	$1,667,765.82			$122,747.56
			Annual Cost:	$122,747.56

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	206	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	4.83%
PC/YD =	41.20	Enhanced Landscaping	
Crash Reduction Factor =	0.27	Additional CRF (%) =	3.50%
CMF * (PC/YD) =	10.93	Ped Fence* weighted for ped	
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$1,662,470.79		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$1,662,470.79}{\$122,747.56} = 13.54$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **South of Silver Star Intersection**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Modifying the Silverstar Intersection**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$188,936.80	20	0.0736	$13,905.75
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other		20	0.0736	$0.00
Sub-Total	$188,936.80			$13,905.75
			Annual Cost:	$13,905.75

			CRF
Total Number of Crashes =	58	Primary CRF (%) =	6.00%
# of Correctable Crashes, PC =	58	Intersection Modification	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	11.60		
Crash Reduction Factor =	0.06	Additional CRF (%) =	
CMF * (PC/YD) =	0.70		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$105,863.69		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$105,863.69}{\$13,905.75} = 7.61$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Move transit Stops**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway		20	0.0736	$0.00
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$19,825.00	20	0.0736	$1,459.12
Sub-Total	$19,825.00			$1,459.12
			Annual Cost:	$1,459.12

			CRF
Total Number of Crashes =	206	Primary CRF (%) =	84.80%
# of Correctable Crashes, PC =	1	Move transit Stop	
# of Years of Data, YD =	5	Additional CRF (%) =	45.00%
PC/YD =	0.20		
Crash Reduction Factor =	0.92	Additional CRF (%) =	
CMF * (PC/YD) =	0.18		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$27,877.44		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$27,877.44}{\$1,459.12} = 19.11$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **SR 50 to Silver Star**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **RRFB**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway		20	0.0736	$0.00
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$48,280.70	20	0.0736	$3,553.46
Sub-Total	$48,280.70			$3,553.46
			Annual Cost:	$3,553.46

			CRF
Total Number of Crashes =	209	Primary CRF (%) =	19.13%
# of Correctable Crashes, PC =	2	Oregon Estimated Value	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	0.40		
Crash Reduction Factor =	0.19	Additional CRF (%) =	
CMF * (PC/YD) =	0.08		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$11,638.92		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$11,638.92}{\$3,553.46} = 3.28$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width)**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,402,275.16	20	0.0736	$103,207.45
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other		20	0.0736	$0.00
Sub-Total	$1,402,275.16			$103,207.45
			Annual Cost:	$103,207.45

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	122	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	24.40		
Crash Reduction Factor =	0.20	Additional CRF (%) =	
CMF * (PC/YD) =	4.88		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$742,262.64		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$742{,}262.64}{\$103{,}207.45} = 7.19$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width) and Landscaping**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,402,275.16	20	0.0736	$103,207.45
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$64,252.50	20	0.0736	$4,728.98
Sub-Total	$1,466,527.66			$107,936.44
			Annual Cost:	$107,936.44

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	122	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	5.09%
PC/YD =	24.40	Landscaping	
Crash Reduction Factor =	0.24	Additional CRF (%) =	
CMF * (PC/YD) =	5.87		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$893,392.18		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$893,392.18}{\$107,936.44} = 8.28$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width), landscaping, and pedestrian fence**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,402,275.16	20	0.0736	$103,207.45
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$95,811.65	20	0.0736	$7,051.74
Sub-Total	$1,498,086.81			$110,259.19
			Annual Cost:	$110,259.19

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	122	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	5.09%
PC/YD =	24.40	Landscaping	
Crash Reduction Factor =	0.26	Additional CRF (%) =	2.21%
CMF * (PC/YD) =	6.28	Ped Fence* weighted for ped	
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$955,756.01		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$955{,}756.01}{\$110{,}259.19} = 8.67$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Widen Sidewalk**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway		20	0.0736	$0.00
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$492,985.87	20	0.0736	$36,283.76
Sub-Total	$492,985.87			$36,283.76
			Annual Cost:	$36,283.76

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	15.00%
# of Correctable Crashes, PC =	122	Widen Sidewalk	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	24.40		
Crash Reduction Factor =	0.15	Additional CRF (%) =	
CMF * (PC/YD) =	3.66		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$556,696.98		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$556,696.98}{\$36,283.76} = 15.34$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Move transit Stops**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway		20	0.0736	$0.00
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$5,915.00	20	0.0736	$435.34
Sub-Total	$5,915.00			$435.34
			Annual Cost:	$435.34

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	84.80%
# of Correctable Crashes, PC =	1	Move transit Stop	
# of Years of Data, YD =	5	Additional CRF (%) =	45.00%
PC/YD =	0.20		
Crash Reduction Factor =	0.92	Additional CRF (%) =	
CMF * (PC/YD) =	0.18		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$27,877.44		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$27,877.44}{\$435.34} = 64.04$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orar** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width) and Enhanced Landscaping**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,402,275.16	20	0.0736	$103,207.45
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$77,642.96	20	0.0736	$5,714.52
Sub-Total	$1,479,918.12			$108,921.97
			Annual Cost:	$108,921.97

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	122	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	5.09%
PC/YD =	24.40	Enhanced Landscaping	
Crash Reduction Factor =	0.24	Additional CRF (%) =	
CMF * (PC/YD) =	5.87		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$893,392.18		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$893,392.18}{\$108,921.97} = 8.20$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **Raised Median (reduced travel lane width), enhanced landscaping, and pedestrian fence**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$1,402,275.16	20	0.0736	$103,207.45
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other	$109,202.11	20	0.0736	$8,037.28
Sub-Total	$1,511,477.27			$111,244.73
			Annual Cost:	$111,244.73

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	20.00%
# of Correctable Crashes, PC =	122	Add Raised Median	
# of Years of Data, YD =	5	Additional CRF (%) =	5.09%
PC/YD =	24.40	Enhanced Landscaping	
Crash Reduction Factor =	0.26	Additional CRF (%) =	2.21%
CMF * (PC/YD) =	6.28	Ped Fence* weighted for ped	
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$955,756.01		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$955{,}756.01}{\$111{,}244.73} = 8.59$$

PREPARED BY: FCM
REVIEWED BY: TP

BENEFIT-COST ANALYSIS

District : **Five** County: **Orange** Date Prepared: **12-Jul-17**

Location: **Silver Star Rd to Bonnie Brae Circle**

Section Beg. MP: End MP:

Roadway Type: **4-Land Divided with TWLTL**

Control Element: **RRFB**

ANNUAL COST OF IMPROVEMENTS

Type	Cost	Service Life	Cap. Recovery Factor	Total
ROW		100	0.0408	$0.00
P.E. CEI		15	0.0899	$0.00
Structure		75	0.0425	$0.00
Roadway	$48,280.70	20	0.0736	$3,553.46
Drainage		20	0.0736	$0.00
Signal		20	0.0736	$0.00
Other		20	0.0736	$0.00
Sub-Total	$48,280.70			$3,553.46
			Annual Cost:	$3,553.46

			CRF
Total Number of Crashes =	122	Primary CRF (%) =	19.13%
# of Correctable Crashes, PC =	2	Oregon Estimated Value	
# of Years of Data, YD =	5	Additional CRF (%) =	
PC/YD =	0.40		
Crash Reduction Factor =	0.19	Additional CRF (%) =	
CMF * (PC/YD) =	0.08		
Cost per crash, CPC =	$152,103.00	Additional CRF (%) =	
Benefit =	$11,638.92		

BENEFIT/COST RATIO

$$\frac{\text{Benefit}}{\text{Cost}} = \frac{\$11,638.92}{\$3,553.46} = 3.28$$

PREPARED BY: FCM
REVIEWED BY: TP

APPENDIX F-4

TECHNICAL MEMORANDUM 6: SAFETY IMPROVEMENT STRATEGIES REPORT

Gateway Study

Gateway Technical Memorandum for the Pine Hills/Silver Star Road Intersection

Prepared For:

WSP / Orange County

Orange County,
Florida

Prepared By:

Littlejohn Project No. 527116110

Dated: August 28, 2017

S&ME prepared a gateway concept and associated hardscape and landscape plans to support the Pine Hills Road Pedestrian/Bicycle Safety Study. The design team coordinated with Orange County, FDOT District 5, the Pine Hills Neighborhood Improvement District, the Pine Hills Community Council, and Maynard Evans High School. During the initial public meeting on January 19, 2017, we learned about the Pine Hills area, their sense of community pride and how they would like that pride showcased at the Pine Hills/Silver Star Road gateway. A site visit of the intersection revealed that the right-of-way is constrained, there is a profusion of "visual clutter", and there is an extreme volume of pedestrians, particularly when Evans High School is dismissed. To prevent adding to the "visual clutter" representatives from the Pine Hills Neighborhood Improvement District recommended that we not propose banners or flags. In the initial public meeting and in two subsequent meetings with Orange County, there was considerable discussion about channeling pedestrian movement and/or making the sidewalks wider.

To accommodate wider sidewalks WSP reviewed the lane widths and turning radii. Portions of two acceleration lanes were proposed to be reduced to increase the sidewalks on the northeast and southwest corners of the Pine Hills/Silver Star Road intersection. Walls and fencing to direct pedestrian flow were not possible given the setbacks required by FDOT safety requirements and the existing right-of-way constraints.

For this study, all of the proposed improvements are within the public right-of-way, including the gateway signage. Each corner of the Pine Hills/Silver Star Road intersection is to be anchored by a low seat wall and signage tower. The tower design allows for the maximum signage area in the minimum footprint. The acrylic tower will allow light and colors to accent the intersection at night and define the gateway. The letters on the wall and tower are inscribed into the base material to reduce venerable attachment points. Proposed pedestrian improvements include wide crosswalks to accommodate heavy pedestrian activity at peak times. Decorative mast arms are proposed to reduce the "visual clutter" created by the existing span wire signals and other above ground utilities. Based on the gateway signage, a companion sign prototype was designed as part of a vehicular-scale wayfinding system.

With no open space within the rights-of-way for landscaping, street trees in tree grates were proposed to provide much needed shade along the sidewalks. The plant pallet was based on Florida-Friendly plants that are known to survive without an irrigation system after establishment. The Pine Hills Neighborhood

Improvement District currently maintains the landscaping in the medians on Silver Star Road and Orange County intends to request similar assistance with maintenance of the additional landscaping proposed in the Pine Hills Road Pedestrian/Bicycle Safety Study.

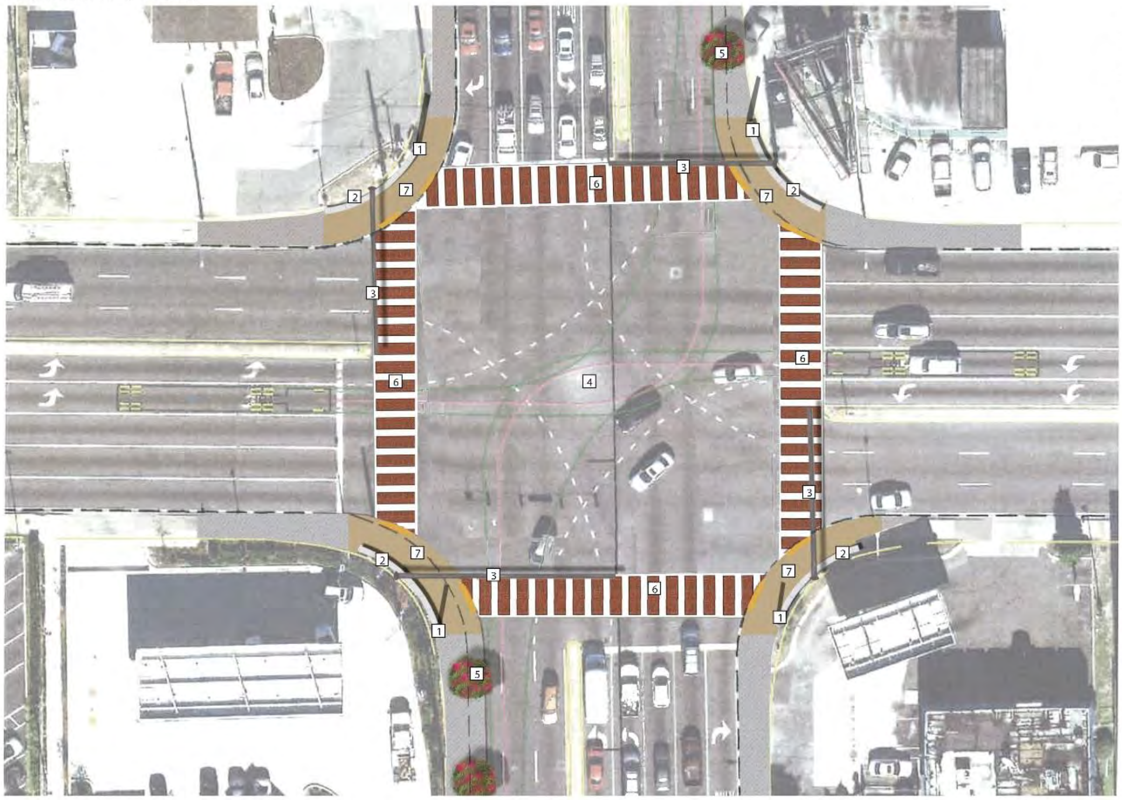
The Opinion of Construction Cost for the gateway improvements covers features proposed at the Pine Hills/Silver Star Road intersection as well as additional landscaping in proposed medians along Silver Star Road. The cost are logically divided into disciplines such as civil, landscape and hardscape. General costs, like mobilization, maintenance of traffic, and permitting are based on percentages. These subtotals change proportionally if there are any changes in the other categories.

Numerous goals and objectives found in Neighborhood Improvement Plan (prepared by the Pine Hills Neighborhood Improvement District) were met by these proposed gateway improvements:

- Create a sense of place through the use of new architectural and landscape design
- Redevelop blighted properties and require streetscaping
- Promote street designs that slow traffic and increase pedestrian safety
- Promote street designs that increase pedestrian safety - crosswalks, pedestrian bridges and vegetated barriers.

Many of the design goals proposed in the CPAT Town Center Report (produced by the American Planning Association) were also met by these proposed gateway improvements. The communities' unique tag line: "Many Cultures, One Bright Future" and the colorful community logo were incorporated in the gateway and wayfinding signage.

HARDSCAPE PLAN



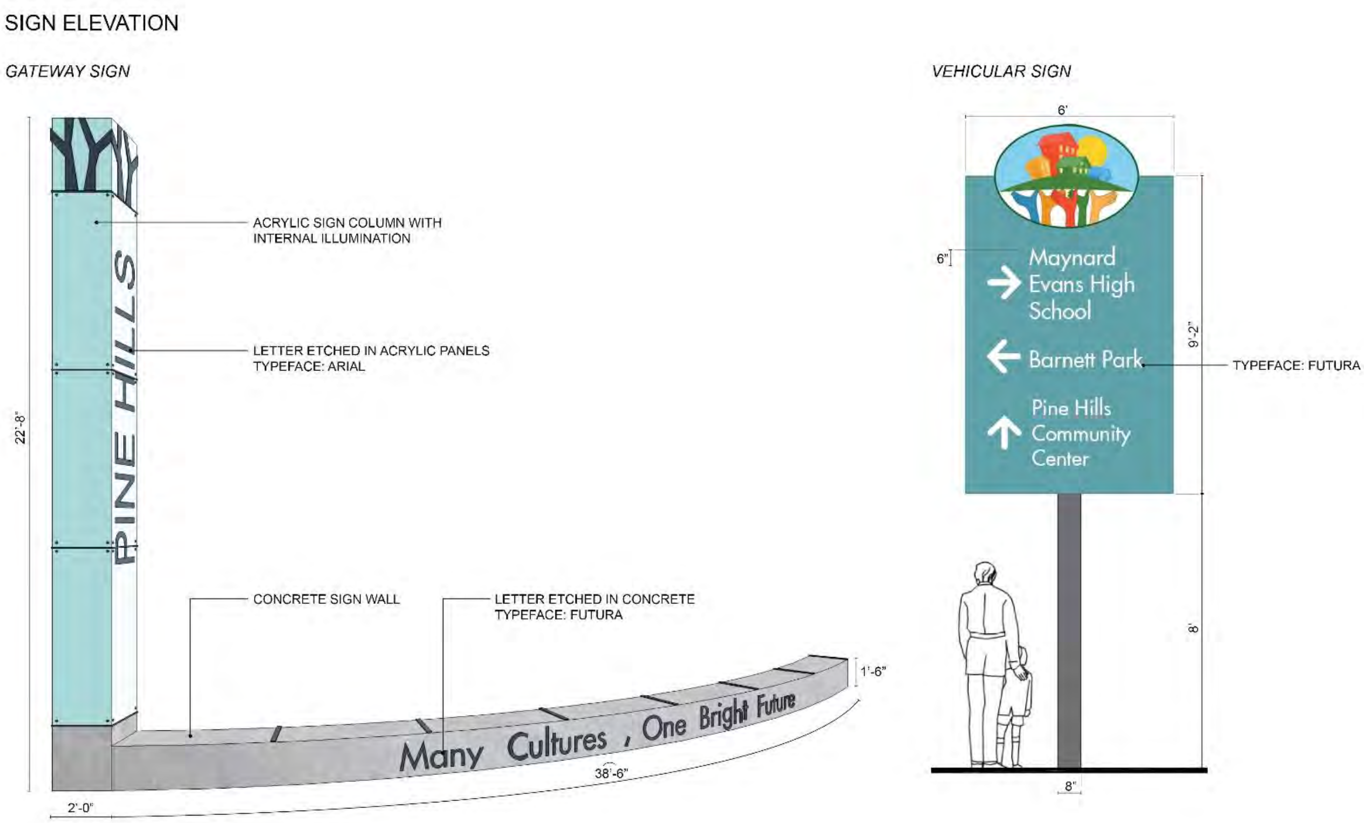
KEYS

1. SIGN TOWER
2. LOW WALL
3. MAST ARM TRAFFIC SIGNAL
4. ASPHALT TO MATCH EXISTING COLOR
5. STREET TREE
6. ENHANCED CROSSWALK
7. PEDESTRIAN LANDING

N

0 15' 30' 60'

LANDSCAPE PLAN



Littlejohn
An S&ME Company

August 28, 2017

Pine Hills Gateway

Orange County, Florida

S&ME

PROJECT NO : 527116110
DATE: 05-30-2017
PROJECT PHASE: Conceptual Design

	Item No.	Item	Quantity	Unit	Price	Subtotal	Description
		Intersection of Pine Hills Rd and Silver Star Rd					
General	A.						
	1.	Mobilization / Erosion Control	12	%		$45,020.46	12% of Total Cost
	2.	Maintenance of Traffic	15	%		$56,275.58	15% of Total Cost
	3.	Permitting	1	Allowance	$5,700.00	$5,700.00	
		Subtotal				**$106,996.04**	
Civil *	B.						
	1.	Demo Existing Crosswalks and Striping	1	Allowance	$30,000.00	$30,000.00	In Preparation for New Crosswalks
	2.	Demo Concrete Walk	268	SY	$17.00	$4,556.00	In Preparation for New Plazas
	3.	Demo Existing Curb	240	LF	$22.00	$5,280.00	In Preparation for New Curbs at Intersection
	4.	Demo Existing Concrete - Silver Star Median west of Pine Hills Rd	235	SY	$20.00	$4,700.00	In Preparation for New Landscaping in Median
	5.	Back Fill, Stabilization Base	400	SY	$12.00	$4,800.00	In Preparation for New Plazas
	6.	Type 'F' Curb	140	LF	$20.00	$2,800.00	At Each Corner of Intersection
	7.	Ribbon Curb for Tree Grate Frame	840	LF	$20.00	$16,800.00	Around Each Tree Well
	8.	Color Concrete Pedestrian Landings @ Curb Returns	400	SF	$20.00	$8,000.00	Stamped 6" Concrete, Brick Pattern
	9.	Crosswalks (STS and Thermoplastic Stripes)	7,200	SF	$8.50	$61,200.00	Brick Pattern to meet FDOT and County requirements
	10.	Handicap Ramps	8	EA	$900.00	$7,200.00	At Intersection, 2 per corner
		Subtotal				**$145,336.00**	
Landscape **	C.						
	1.	Flowering / Accent Trees	21	EA	$650.00	$13,650.00	65 gallon
	2.	Landscaping - Silver Star Median west of Pine Hills Rd	2,110	SF	$3.00	$6,330.00	Medium Shrubs and Groundcovers (3 and 1 gallon)
	3.	Excavation & Planting Soil / Soil Amendment	14,730	CF	$2.00	$29,460.00	Median on Silver Star Rd and Pine Hills Rd Street Trees
	4.	Shredded Mulch	4,210	SF	$0.45	$1,894.50	Ground Melaleuca, Median on Silver Star Rd and Pine Hills Rd Street Trees
		Subtotal				**$51,334.50**	
Hardscape	D.						
	1.	Tree Grates	21	EA	$500.00	$10,500.00	Metal, ADA Compliant Surface
	2.	Gateway Signs	4	EA	$32,000.00	$128,000.00	One Per Corner (tower and wall incl)
	3.	Wayfinding Signage	8	EA	$5,000.00	$40,000.00	Vehicular Scale Based on FDOT Standards
		Subtotal				**$178,500.00**	
Total	E.	**Subtotal**				**$375,170.50**	**Civil, Landscape, Hardscape from B., C., D.**
	1.	General Expenses (A.)				**$106,996.04**	**General from A.**
	2.	Contractor Overhead & Profit	12	%		**$57,859.98**	12% of Total Cost
	3.	Contingency	20	%		**$108,005.30**	20% of Total Cost
		Grand Total				**$648,031.82**	

* Relocating or replacing existing utilities not included
**Hand watering amd maintenance will be required but is not included

APPENDIX F-5

TECHNICAL MEMORANDUM 6: SAFETY IMPROVEMENT STRATEGIES REPORT

Sight-Line Analysis

The crash data compiled for driveways and intersections within the Pine Hills Road study limits were reviewed to identify high accident pedestrian locations. Based on the crash data reviewed, a threshold of at least two or more crashes occurring within a given area were considered to be a high accident location. The locations meeting these criteria are listed below and photographs of each are included at the end of this section:

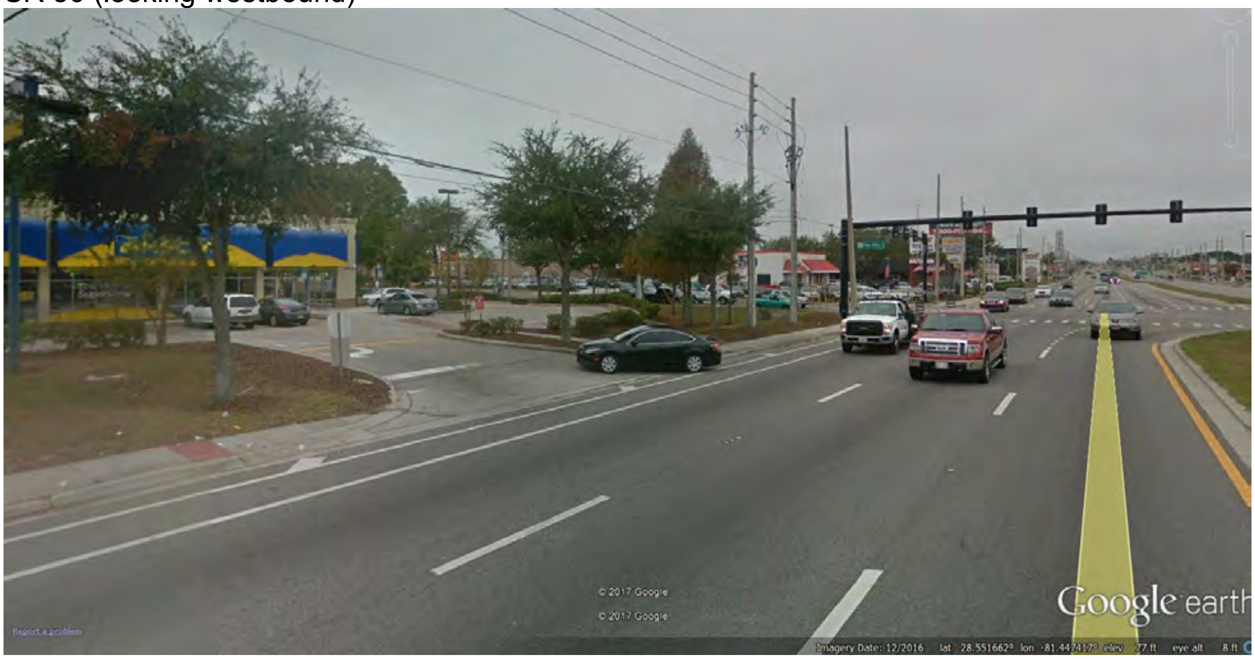
- Location 1: Driveway for Amscot office 110 feet southeast of the signalized intersection of Pine Hills Road & SR 50
  - Northbound vehicles (exiting Amscot driveway) struck pedestrians walking east and west across the driveway
- Location 2: Unsignalized intersection of Pine Hills Road & Sunray Drive
  - Westbound vehicles (on Sunray Drive) struck bicyclists travelling south across Sunray Drive
- Location 3: Unsignalized intersection of Pine Hills Road & Sunniland Drive
  - Eastbound vehicles (on Sunniland Drive) struck pedestrians and a bicyclist travelling across Sunniland Drive
- Location 4: Unsignalized intersection of Pine Hills Road & Indian Hill Road
  - Eastbound vehicles (on Indian Hill Road) struck pedestrians walking north across Indian Hill Road
- Location 5: Driveway across from the unsignalized intersection of Pine Hills Road & Van Aken Drive
  - Northbound vehicles (on Pine Hills Road) struck pedestrians walking east and west, to and from the property at the subject driveway

The diagrams for these crashes can be seen in *Technical Memorandum No. 3—Existing Conditions* (see **Appendix C**). At these locations, the visibility of pedestrians and bicycles was evaluated from the perspective of motorists being able to detect pedestrian or bicycle activities. The locations were reviewed examined for potential sight-line obstructions. No sight-line calculations or sight-line diagrams were developed as part of this evaluation. The following recommendations were developed.

Location	Observations	Recommendations to Address Sight-line Obstructions
1	No sight-line obstruction identified	No modification required
2	No sight-line obstruction identified	Install crosswalk markings missing for east approach (Sunray Dr)
3	Fencing, landscaping & existing business sign on property in southwest quadrant of intersection may cause limited sight-line obstruction for eastbound traffic on Sunniland Drive.	Improve lighting; install crosswalk missing for west approach (Sunniland Dr); add R10-15 Sign (turning vehicles yield to pedestrians) eastbound in advance of stop bar. Coordinate with business owner to relocate sign location.
4	Utility poles & existing business sign on property in southwest quadrant of intersection may cause limited sight-line obstruction for eastbound traffic on Indian Hill Road	Relocate School Crossing assembly signage (S1-1, W16-7P) to crosswalk location; Improve lighting; Coordinate with business owner to modify sign location.
5	Trees limbs may be causing limited sight-line obstruction to observe northbound traffic	Remove trim tree limbs to resolve any sight-line obstructions at the driveway; Improve lighting; install crosswalk missing for west approach (Van Aken Dr)

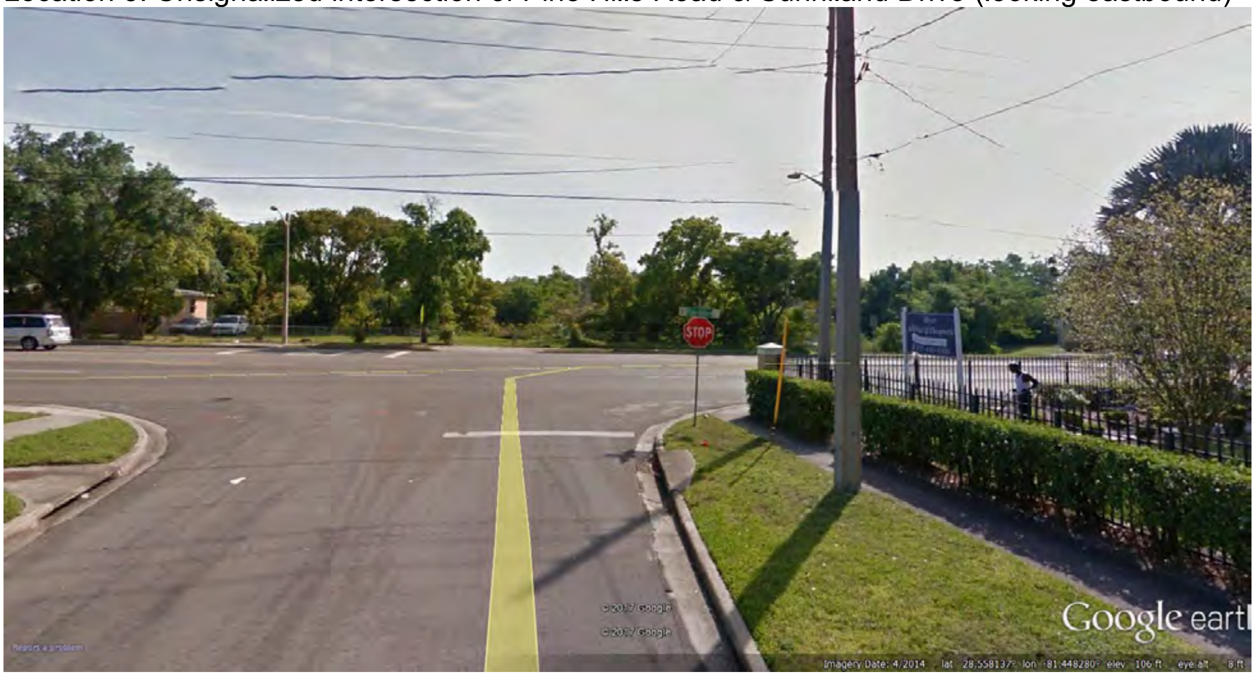
It was also noted that north of Grandview Drive, a private driveway on the west side of Pine Hills Road has sight lines blocked significantly by landscaping along the property frontage. However, no pedestrian or bicycle crashes occurred at this location during the study period.

Location 1: Driveway for Amscot office southeast of signalized intersection of Pine Hills Road & SR 50 (looking westbound)



Location 2: Unsignalized intersection of Pine Hills Road & Sunray Drive (looking westbound)

Location 3: Unsignalized intersection of Pine Hills Road & Sunniland Drive (looking eastbound)



Location 4: Unsignalized intersection of Pine Hills Road & Indian Hill Road (looking eastbound)

Location 5: Driveway across from the intersection of Pine Hills Road & Van Aken Drive (looking southbound)

Driveway north of Grandview Drive, west side of Pine Hills Road (looking northbound)