NORTH CANYONS TRAFFIC IMPACT STUDY ADDENDUM – 2ND PD AMENDMENT

Castle Pines, Colorado

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EXECUTIVE SUMMARY

The City of Castle Pines, Colorado has already approved the Canyons Planned Development (PD) and the related 1st PD Amendment. This approval included 3,500 dwelling units and 2.1 million square feet of commercial space in an area east of Interstate 25 (I-25) between Castle Pines Parkway/Hess Road and Happy Canyon Road called The Canyons. The *North Canyons Traffic Impact Study* (TIS) was completed to analyze current and future traffic conditions on the roadway network near the site.

This report serves as addendum to the *North Canyons TIS* and analyzes traffic conditions associated with a proposed 2nd PD Amendment. The 2nd PD Amendment includes an increase in development density in the southern portion of the Canyons (near Crowfoot Valley Road) by adding 1,500 dwelling units and allocating 90,000 square feet of commercial space from the 2.1 million square feet already approved. Additionally, a potential 2,500-student high school is analyzed as a part of this amendment. Analyses found in this TIS Addendum focus on long-term future traffic conditions and examine the traffic potential of Canyonside Boulevard, a future north-south arterial paralleling I-25 between Hess Road and Crowfoot Valley Road.

The analyses in this TIS addendum demonstrate that additional traffic generated by development proposed in the 2nd PD Amendment can be handled acceptably on the roadway network with some additional improvements.

Traffic operations were evaluated in a separate scenario considering the addition of the high school. Few additional improvements are required to accommodate the traffic generated by the potential high school. However, little is known about the proposed high school at this time, especially regarding the service area boundary. As a result, recommendations made in this report to serve the high school are subject to change pending new information from the school district.

I. INTRODUCTION

This addendum serves as a supplement to the *North Canyons Traffic Impact Study* (TIS).[1] The TIS was submitted in March 2019 to assess traffic operations of development access intersections and the adjacent roadway network for the approved zoned density within North Canyons, a proposed mixed-use development located in the southeast corner of the Interstate 25 (I-25) interchange with Castle Pines Parkway/Hess Road in Castle Pines, Colorado. The approved zoned density includes 500 dwelling units (DUs) and 1,920 thousand square feet (KSF) of commercial development that were evaluated in Planning Areas (PA) 1 through 3 (North Canyons). The TIS considered the interaction of North Canyons with 2,000 DUs in PA-4 through PA-11 (Shea Canyons). The TIS also evaluated the 1st Planned Development (PD) Amendment, reflecting an addition of 1,000 DUs to PA-1 through PA-3. This amendment was approved in April 2019. **Figure 1** displays a proposed site plan of The Canyons PD from 2009.

The TIS identified improvements needed to accommodate vehicle-trips generated by the development, the 1st PD Amendment, and regional background traffic. The traffic volumes and improvements used in the long-term evaluations of the TIS serve as the base for the traffic assessments in this addendum, which will assess traffic operations for The Canyons considering a 2nd PD Amendment.

I.A. Development Description

The 2nd PD Amendment proposes developing the southern portion of The Canyons with 1,500 new residential DUs in PA-13 through PA-19, 90 KSF of previously approved commercial space in PA-19, and a possible 2,500-student high school in PA-13. These land uses would be located along Canyonside Boulevard between Happy Canyon Road and Crowfoot Valley Road. **Figure 2** displays the location of the 2nd PD Amendment development relative to the surrounding roadway network, North Canyons, and Shea Canyons. For the purpose of this analysis, full buildout of the development was assumed to be completed by Year 2040.

I.B. Study Purpose & Scope

The purpose of this addendum is to assess traffic operations of the roadway network surrounding The Canyons considering the development proposed in the 2nd PD Amendment and the future connection of Canyonside Boulevard to Crowfoot Valley Road. This assessment evaluates the base roadway network and identifies improvements needed to accommodate background traffic growth and vehicle-trips generated by the development. This TIS addendum includes information regarding forecasted background traffic conditions, site-generated vehicle trips and their distribution on the roadway network, total traffic volumes and operations, and recommendations for improvements.

Analysis Scenarios

This TIS addendum documents analysis of long-term traffic operations (Year 2040) assuming the construction of Canyonside Boulevard south to Crowfoot Valley Road. This connection creates a continuous arterial between Crowfoot Valley Road and Hess Road. As a result, additional background traffic is expected to use Canyonside Boulevard as an alternative route to I-25.

Within the long-term scenario, background traffic conditions were analyzed first, including site-generated traffic from The Canyons PD and the 1st PD Amendment. Next, total traffic conditions were analyzed by adding site-generated traffic from planned residential and commercial developments in the 2nd PD Amendment. Finally, total traffic conditions were reassessed considering a high school in PA-13.

[1] *North Canyons Traffic Impact Study*, Felsburg Holt & Ullevig, Centennial, Colorado, March 2019.

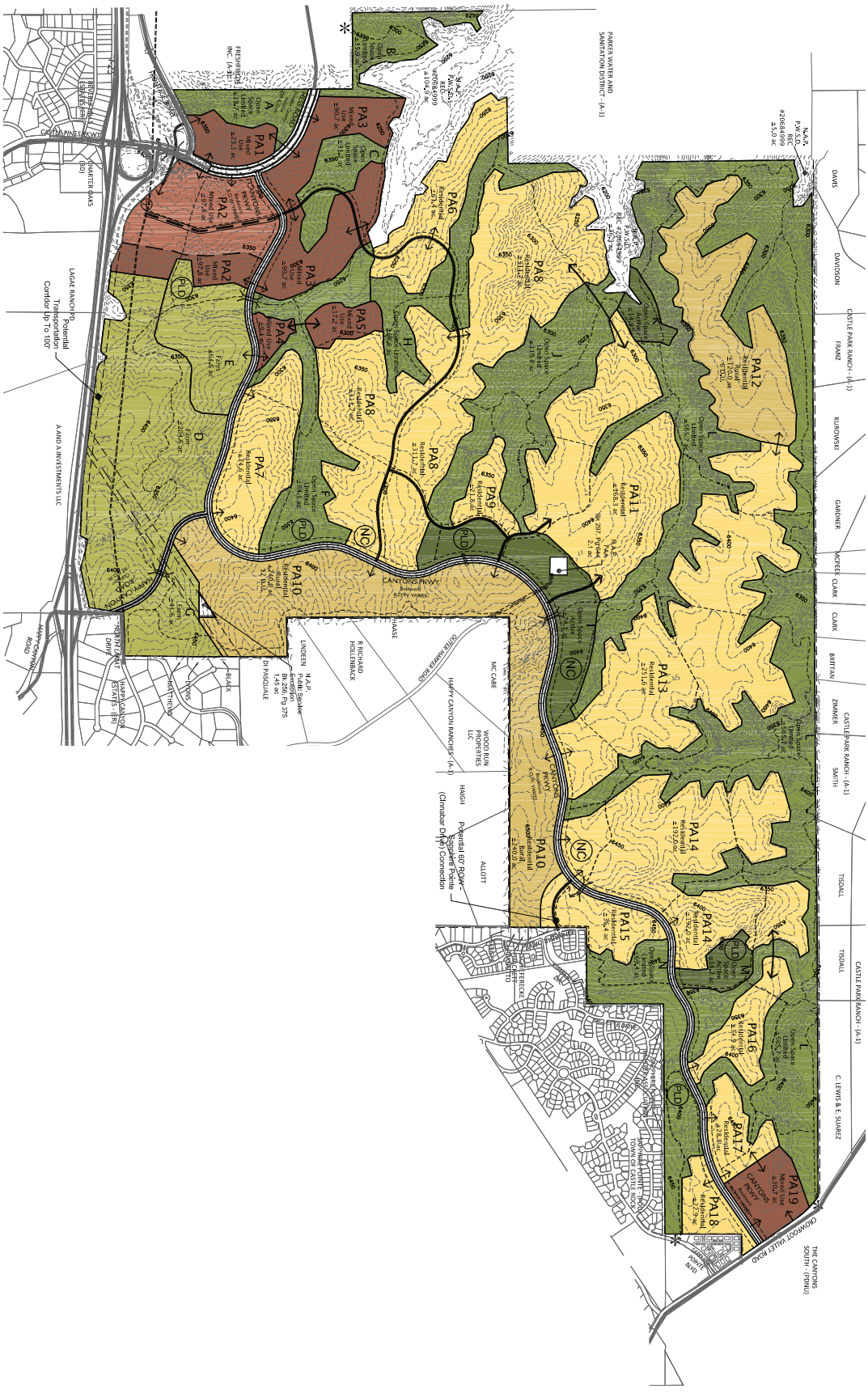

FIGURE 1

The Canyons Planned Development (2009)

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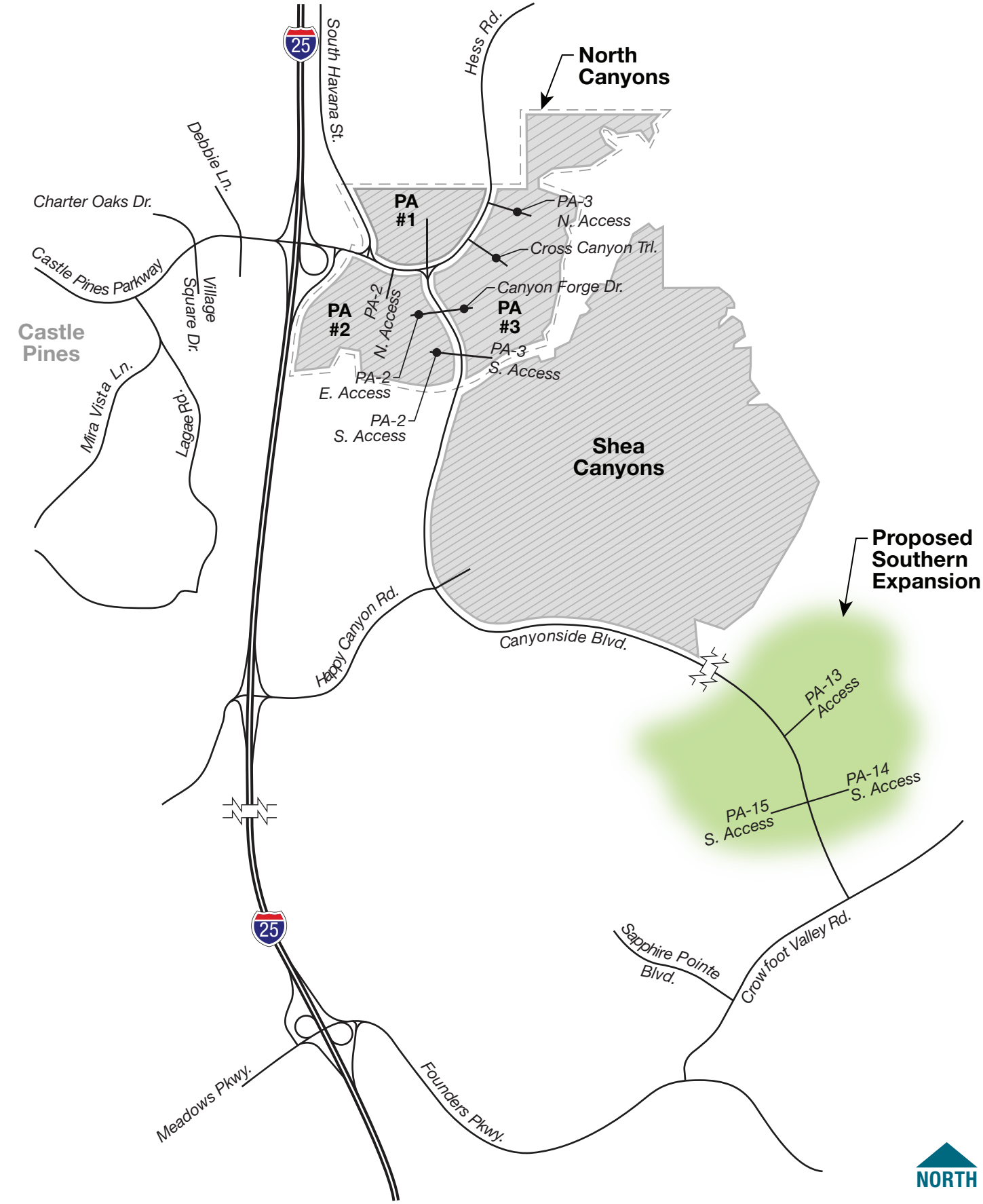

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NOTE: Drawing Not to Scale

FIGURE 2

2nd PD Amendment Vicinity Map

Study Area

The chosen study area includes all the intersections that were evaluated as a part of the original TIS. Four additional intersections were added to determine the impact of the 2nd PD Amendment development on the roadway network south of Happy Canyon Road. **Figure 3** displays the locations of study intersections, which are listed below. Study intersections marked with an asterisk (*) are only evaluated in the total traffic scenario.

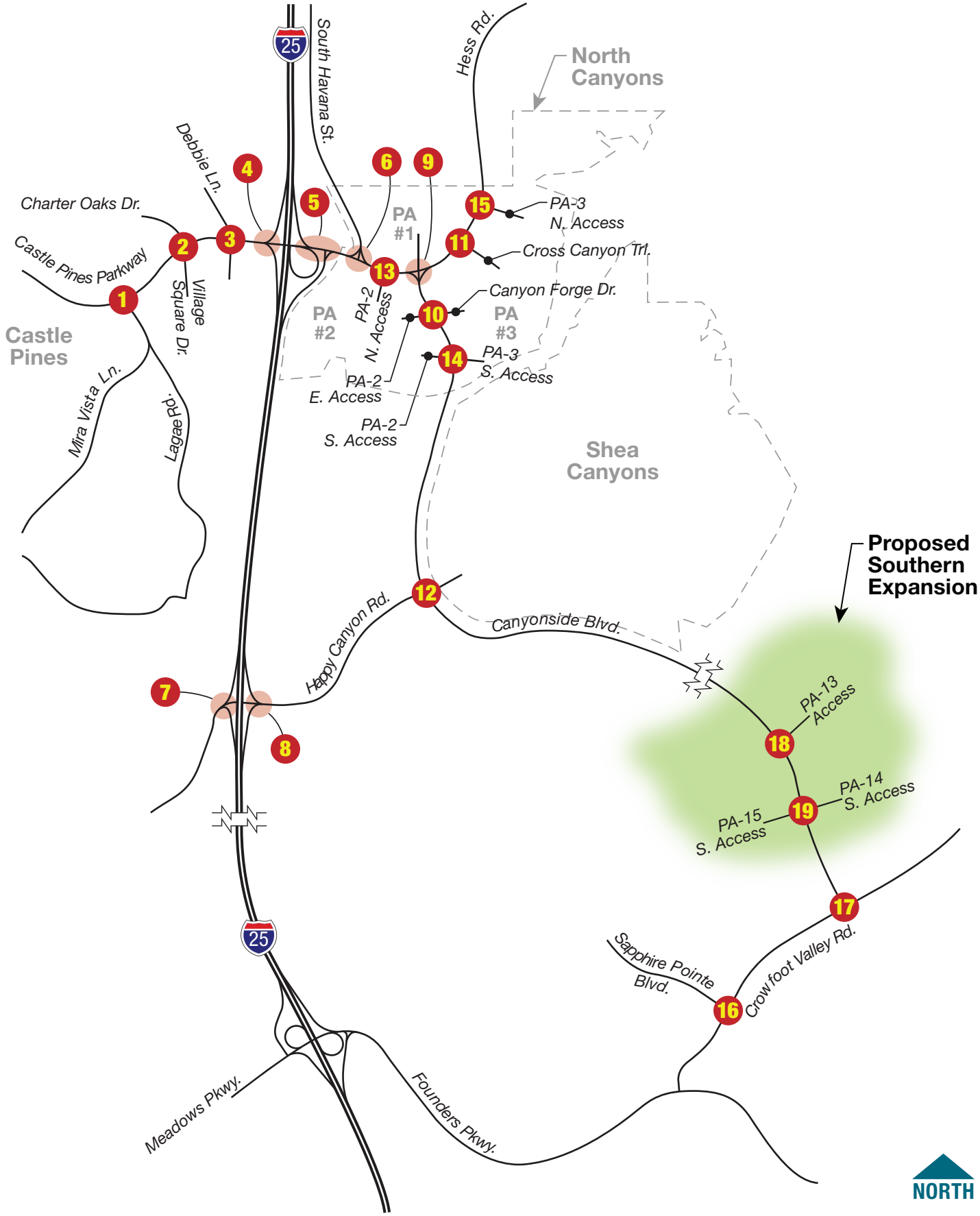
1. Castle Pines Parkway & Lagae Road
2. Castle Pines Parkway & Charter Oaks Drive/Village Square Drive
3. Castle Pines Parkway & Debbie Lane
4. Castle Pines Parkway & I-25 Southbound Ramps
5. Castle Pines Parkway & I-25 Northbound Ramps
6. Castle Pines Parkway/Hess Road & Havana Street
7. Happy Canyon Road & I-25 Southbound Ramps
8. Happy Canyon Road & I-25 Northbound Ramps
9. Hess Road & Canyonside Boulevard/PA-1 Access
10. Canyonside Boulevard & Canyon Forge Drive/PA-2 East Access
11. Hess Road & Cross Canyon Trail
12. Happy Canyon Road & Canyonside Boulevard
13. Hess Road & PA-2 North Access
14. Canyonside Boulevard & PA-2 South Access/PA-3 South Access
15. Hess Road & PA-3 North Access
16. Crowfoot Valley Road & Sapphire Pointe Boulevard
17. Crowfoot Valley Road & Canyonside Boulevard
18. Canyonside Boulevard & PA-13 Access *
19. Canyonside Boulevard & PA-14 South Access/PA-15 South Access *

I.C. Analysis Methodology

As with the original TIS, traffic operations in this addendum were evaluated using techniques from the *Highway Capacity Manual, Sixth Edition* (HCM) through Synchro software (version 10.3). Peak hour factors (PHFs) were calculated at each intersection where traffic counts were available. For intersections that do not currently exist, a PHF of 0.90 was assumed for all approaches.

Level of Service (LOS), was determined for all movements that must yield right-of-way to other traffic movements to categorize the quality of traffic operations. Per *Douglas County Roadway Design and Construction Standards*, LOS D (or better) was set as the design objective for all signalized intersections and roadway segments.[2]

[2] *Douglas County Roadway Design and Construction Standards*, Appendix B; Updated February 2018.



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NOTE: Drawing Not to Scale

FIGURE 3

Study Area Intersections

Canyons 2nd PD Amendment TIS - April Version 18-213-03 7/16/19

II. BACKGROUND TRAFFIC CONDITIONS

The background traffic condition of the long-term scenario is based on the analysis conducted in the original TIS, including the 1st PD Amendment. All planned roadway network changes are assumed in this scenario, but no site-generated traffic is added from the 2nd PD Amendment development. Planned improvements include all recommendations shown in the original TIS. By Year 2030, Crowfoot Valley Road will be a four-lane major arterial, per the Douglas County 2030 Transportation Plan (2009). Additionally, Canyonside Boulevard will be constructed as a continuous four-lane arterial south of Happy Canyon Road to create a connection to Crowfoot Valley Road. As a result of this connection, additional background traffic will use Canyonside Boulevard and the other study intersections. To assess the impacts of background traffic changes on Crowfoot Valley Road, two intersections were added to the study area at Sapphire Pointe Boulevard (intersection 18) and Canyonside Boulevard (intersection 19).

The background condition incorporates anticipated traffic volumes not associated with the 2nd PD Amendment, including:

- All traffic shown in the long-term scenario of the original TIS, including the approved Canyons PD and 1st Amendment.
- New background traffic using Canyonside Boulevard as an arterial connection between Crowfoot Valley Road and Hess Road.

The following sections discuss the sources of background traffic, overall background traffic volumes and operations, and recommended roadway network improvements to serve background traffic.

II.A. Traffic Volumes

Background traffic volumes on the roadway network in the study area consist of regional background traffic growth, site traffic from the approved Canyons PD (North Canyons as amended and Shea Canyons), and new traffic using Canyonside Boulevard as an alternate north-south route to I-25.

Approved Canyons Development

The initial Canyons PD was approved in 2009 with up to 2,500 residential DUs and 2,100 KSF of commercial development. Since then, development rights for 2,000 DUs in PA-4 through PA-11 were transferred to a residential developer--this portion of the PD is referred to as Shea Canyons. This development was approved, along with an independent traffic impact study (Shea TIS) in 2017.[3] A second portion of the PD was shifted into PA-1 through PA-3 and called North Canyons, which was analyzed assuming 500 DUs and 1,920 KSF of commercial development. The recently approved 1st PD Amendment adds 1,000 DUs to The Canyons. These units have been analyzed assuming they are developed in PA-2 as part of the overall North Canyons mixed-use development. Considering the approved and planned development thus far, the Canyons is expected to consist of 3,500 DUs and 2.1 MSF of commercial development.

The mix of commercial, office, and residential land uses proposed in the approved Canyons PD and 1st Amendment will likely result in internal trip capture, reducing the number of vehicle-trips that ultimately reach the external roadway network. Based on information contained in *Trip Generation Handbook, ITE, 3rd Edition (2017)*, as well as references to the DRCOG regional transportation model, an internal trip capture was applied to quantify vehicle-trips occurring within the approved Canyons development. This results in a 22% reduction of daily trips, 11% during the AM peak hour, and 35% during the PM peak hour. Of the total internal vehicle-trips estimated, about 71% will occur entirely

[3] *Shea Homes Development Transportation Impact Study*, Fehr & Peers, Denver, Colorado, November 2017.

within the North Canyons mixed-use area and 1st PD Amendment (PA-1 through PA-3). The remaining 29% will involve trips between Shea Canyons and North Canyons.

Table 1 displays daily and peak hour vehicle-trip generation characteristics of the approved and planned developments in The Canyons. As shown in the table, the approved Canyons PD and 1st Amendment developments will generate about 59,800 daily external vehicle-trips, 4,500 AM peak hour trips, and 5,225 PM peak hour trips. The North Canyons planning areas will generate nearly 40,800 daily external vehicle-trips, 2,900 AM peak hour trips, and 3,200 PM peak hour trips.

Table 1. Approved Canyons Trip Generation Summary

Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
North Canyons Mixed Use Area & 1st PD Amendment								
Commercial – Retail	450 KSF	28,615	702	542	1,244	1,224	1,262	2,486
Office	1,094 KSF	11,395	1,047	170	1,217	193	1,015	1,208
Multi-Family Residential	1,500 DU	8,875	147	442	589	447	278	725
Hotel	480 Rooms	3,515	125	91	216	143	141	284
Assisted Living	30 KSF	130	9	3	12	5	10	15
Gross Subtotal		***52,530***	***2,030***	***1,248***	***3,278***	***2,012***	***2,706***	***4,718***
North Canyons Internal Capture Reduction		*9,115*	*148*	*148*	*296*	*589*	*589*	*1,178*
Shea Canyons								
Single-Family Residential	2,000 DU	16,365	356	1,069	1,425	1,136	667	1,803
Commercial – Retail	30 KSF	2,655	104	63	167	107	116	223
Gross Subtotal		***19,020***	***460***	***1,132***	***1,592***	***1,243***	***783***	***2,026***
Shea Canyons Internal Capture Reduction		*2,625*	*42*	*42*	*84*	*170*	*170*	*340*
Gross Vehicle-Trips		**71,550**	**2,490**	**2,380**	**4,870**	**3,255**	**3,489**	**6,744**
Internal Capture Trip Reduction		11,740	190	190	380	759	759	1,518
Net Vehicle-Trips		**59,810**	**2,300**	**2,190**	**4,490**	**2,496**	**2,730**	**5,226**

Canyonside Boulevard Connection

The background traffic using Canyonside Boulevard as an arterial was calculated using information from the Denver Regional Council of Governments (DRCOG) regional traffic model and recent traffic counts and is expected to be nearly 10,300 vehicles per day (vpd) by Year 2040. Approximately 9.6% and 11.4% of this volume would use Canyonside Boulevard during the AM and PM peak hours, respectively. These peak hour percentages are expected to be similar to those experienced on Crowfoot Valley Road near the site. The following distribution of traffic was assumed for background traffic using Canyonside Boulevard:

- North of 2nd PD Amendment Development
  - I-25 North (via Castle Pines Parkway): 50%
  - I-25 North (via Happy Canyon Road): 35%
  - Havana Street (North of Castle Pines Parkway): 5%
  - Hess Road (East of Canyonside Boulevard): 5%
  - North Canyons: 5%
- South of 2nd PD Amendment Development
  - Crowfoot Valley Road (West of Canyonside Boulevard): 30%
  - Crowfoot Valley Road (East of Canyonside Boulevard): 70%

Background traffic volumes over the bridge between I-25 ramps on Castle Pines Parkway are approximately 4,010 in the AM peak hour (61% EB, 39% WB) and 4,280 in the PM peak hour (58% EB, 42% WB) with no addition of traffic from the 2nd PD Amendment development. Happy Canyon Road serves nearly 1,700 vehicles per hour (vph) during the AM peak hour (49% EB, 51% WB), and about 2,390 vph during the PM peak hour (54% EB, 46% WB) between the I-25 ramps. South of Shea Canyons, Canyonside Boulevard serves approximately 990 vph during the AM peak hour (60% NB, 40% SB) and 1,175 vph in the PM peak hour (40% NB, 60% SB). Finally, Crowfoot Valley Road west of Canyonside Boulevard serves approximately 2,410 vph during the AM peak hour (46% EB, 54% WB), and 2,870 vph during the PM peak hour (49% EB, 51% WB). Long-term peak hour background traffic turning movements are shown on **Figure 4**.

II.B. Traffic Operations

Most signalized intersections operate at acceptable LOS in the background traffic condition. However, some intersection movements experience operations (LOS E or F). The westbound through movement at Castle Pines Parkway/Hess Road & Havana Street does not have enough capacity to service the AM volume, which operates at LOS F. Similarly, the eastbound right-turn movement from Happy Canyon Road to southbound Canyonside Boulevard operates at LOS F during the PM peak hour.

Southbound left-turn movements from Sapphire Pointe Boulevard and Canyonside Boulevard to Crowfoot Valley Road (intersections 16 and 17) operate at LOS F with unsignalized traffic control during both peak hours. **Figure 5** displays long-term total background traffic operations including LOS and intersection geometries at each study intersection.

II.C. Recommended Improvements

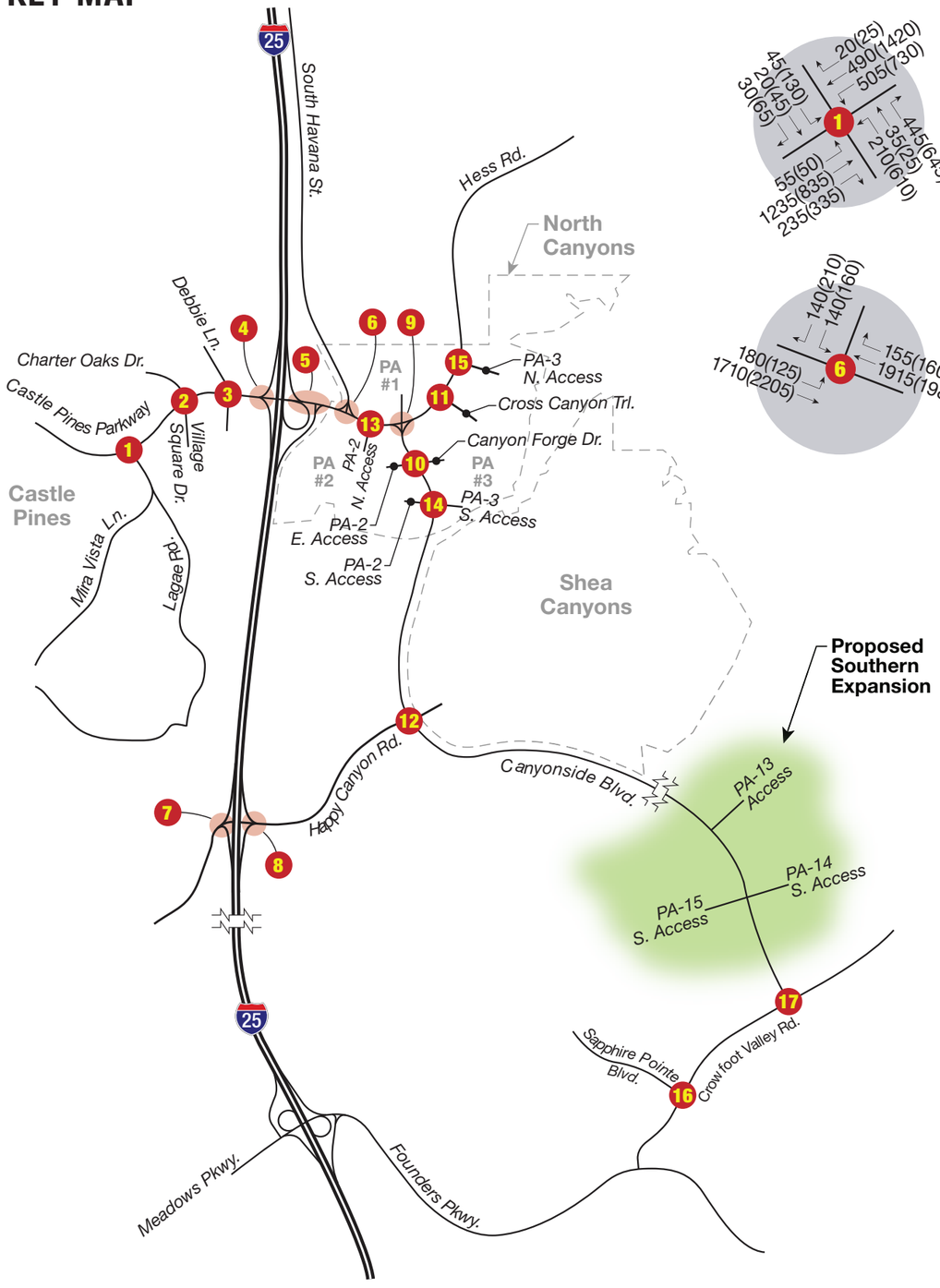
Recommended improvements have been identified based on both the approved Canyons Development and the Canyonside Boulevard Connection.

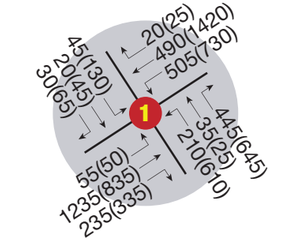
Approved Canyons Development

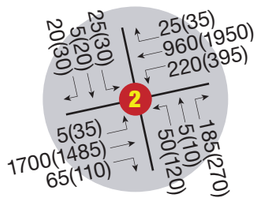
The March 2019 study documented improvements necessary for The Canyons, including the North Canyons area, Shea Canyons, and the additional dwelling units associated with the 1st PD Amendment. Table 5 in that study provides a summary of the committed improvement program. The only change to those results incorporated into this study is an evaluation of Happy Canyon Road between I-25 and Canyonside Boulevard.

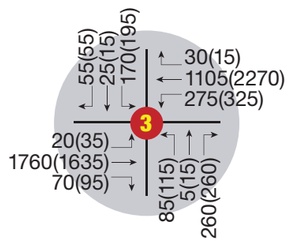
The Shea Canyons project will construct Happy Canyon Road between I-25 and Canyonside Boulevard as part of their Phase 1A development work. Although the Shea Canyons memo does not describe the cross-section of Happy Canyon Road, the Phase 1A intersection assumptions would allow for a two-lane

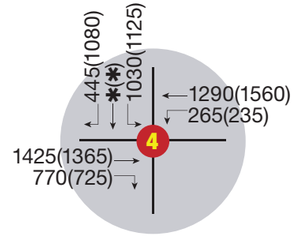
KEY MAP

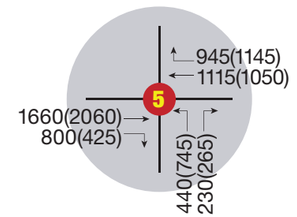


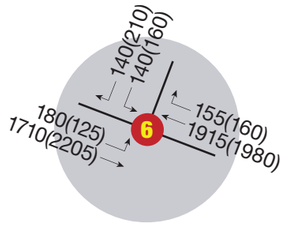


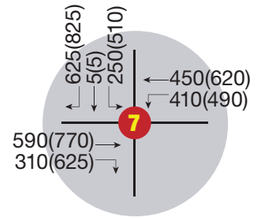


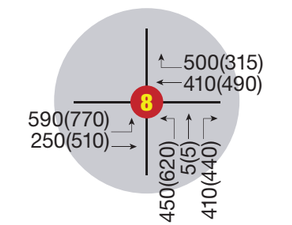


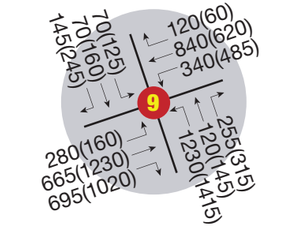


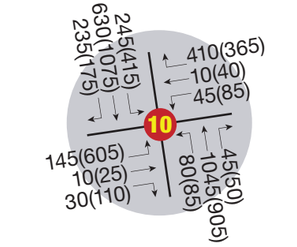


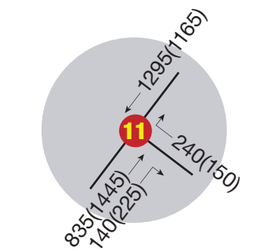


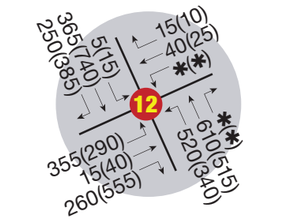


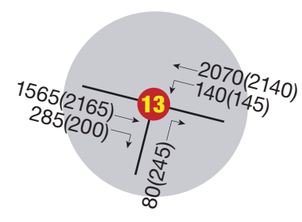


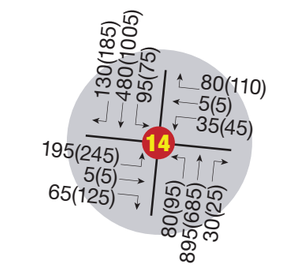


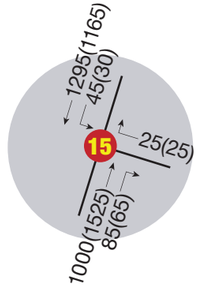


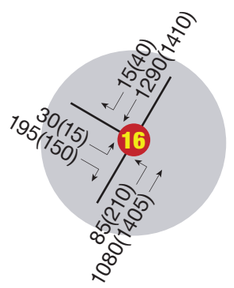


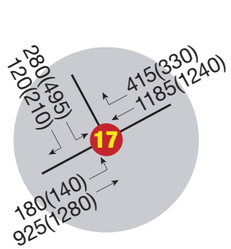












LEGEND		
XXX(XXX)	=	AM(PM) Peak Hour Traffic Volumes
*	=	Less Than 5 Vehicles per Day (vph)

NOTE: Drawing Not to Scale

NORTH

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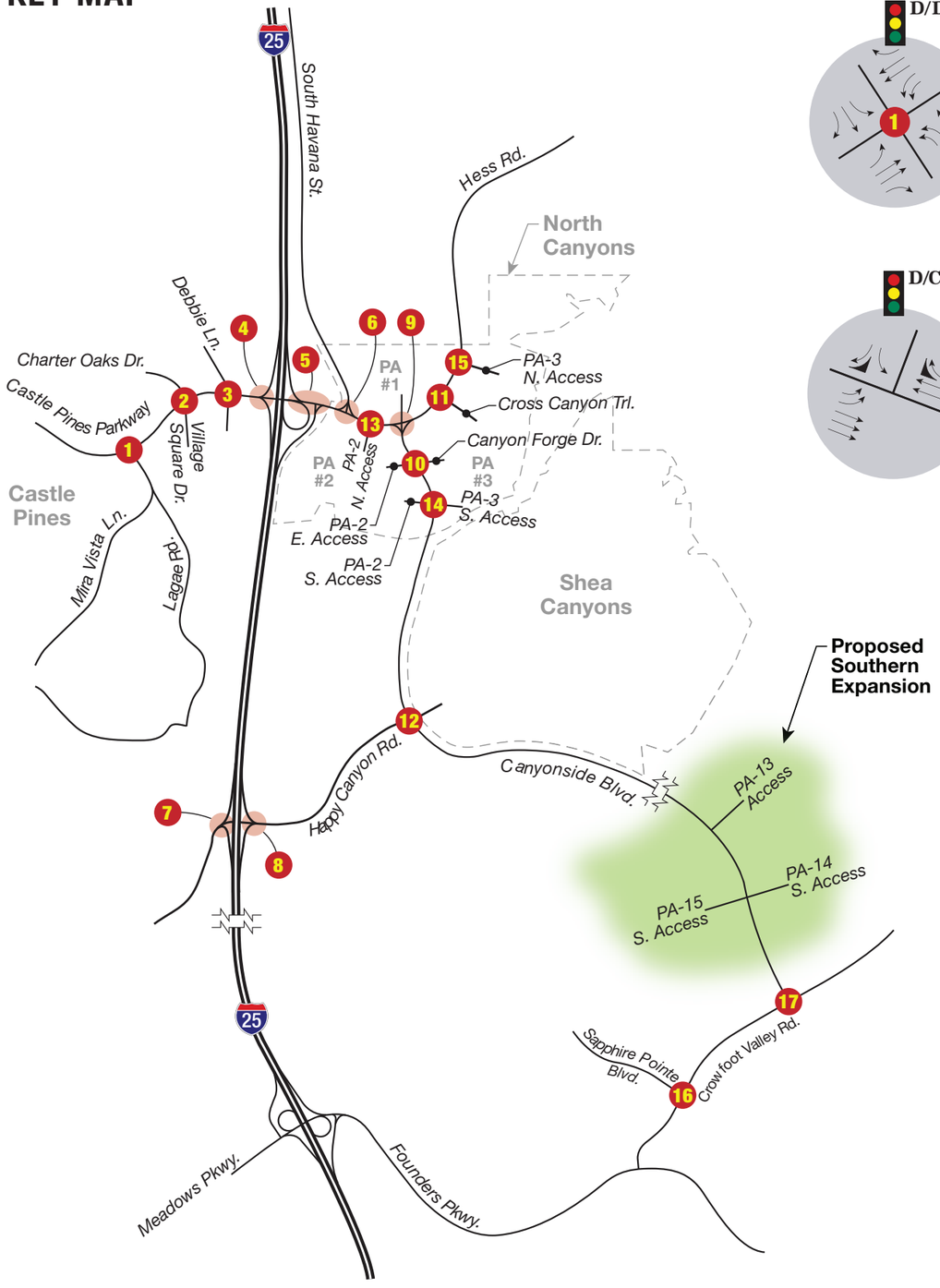
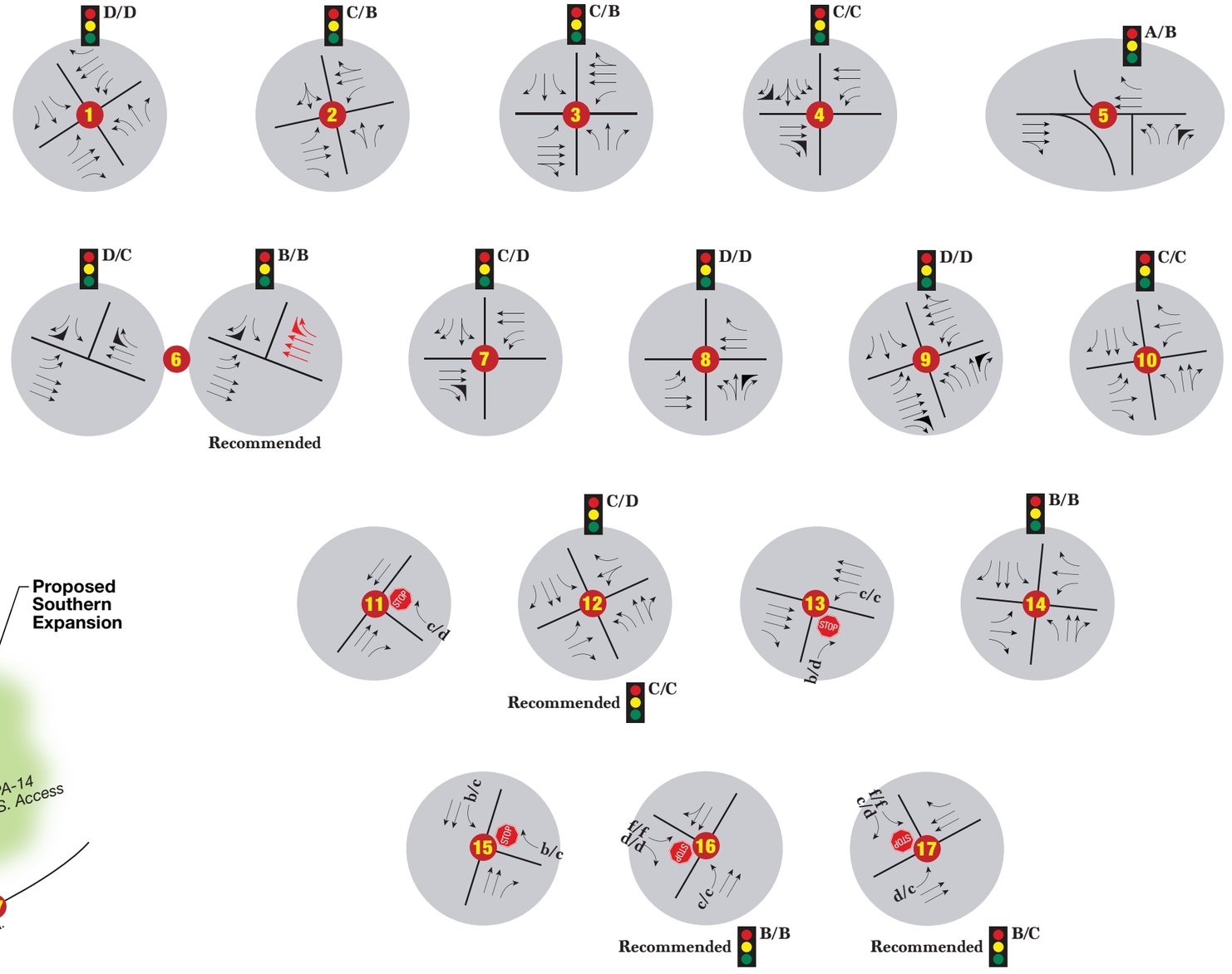
FIGURE 4
Long-Term Background Traffic Volumes

KEY MAP





LEGEND

X/X	= AM/PM Peak Hour Signalized Intersection Level of Service	STOP	= Stop Sign
x/x	= AM/PM Peak Hour Unsignalized Intersection Level of Service		= Traffic Signal
			= Recommended Improvements

NOTE: Drawing Not to Scale

NORTH

FIGURE 5
Long-Term Background Traffic Operations

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cross-section (one lane per direction) with turn lanes at Canyonside Boulevard and at the I-25 interchange[4]. The Phase 1B intersection assumptions describe a double left turn lane northbound from Canyonside Boulevard onto Happy Canyon Road and a third eastbound lane[5]. This would require widening of westbound Happy Canyon Road to receive two lanes of turning traffic, and possibly a widening of eastbound Happy Canyon Road to feed traffic to the proposed three-lane intersection approach. Phase 1C and Phase 2 build on these assumptions, but do not show a need for additional lanes along Happy Canyon Road.

The approved North Canyons analyses indicate that a four-lane cross section for Happy Canyon Road will be needed by 2040, and this is an assumed improvement under the long-term scenario in that study. However, the previous analyses did not include the connection of Canyonside Boulevard to Crowfoot Valley Road. The creation of this connection is anticipated to increase traffic along Happy Canyon Road regardless of 2nd PD Amendment traffic from the Canyons. Given identified needs for the four-lane cross-section in both the Shea Canyons analyses and the previous Canyons study, it is recommended that Happy Canyon Road be widened to a four-lane cross-section upon connection of Canyonside Boulevard to Crowfoot Valley Road (if not already widened by others).

Canyonside Boulevard Connection

Improvements to the roadway network should be made to accommodate the growth of background traffic caused by the connection of Canyonside Boulevard to Crowfoot Valley Road. A third westbound through lane should be constructed at the Castle Pines Parkway/Hess Road & Havana Street intersection to provide additional capacity. At the Happy Canyon Road & Canyonside Boulevard intersection, the new background traffic on Canyonside Boulevard results in a significant increase in traffic volumes for eastbound right-turns, northbound left-turns, and northbound and southbound through movements. To provide acceptable LOS at this intersection, overlap phasing should be provided for eastbound right-turns.

Forecasted traffic volumes and operations along Crowfoot Valley Road in the background traffic condition indicate that two-way stop control will not be sufficient for the long-term future. Traffic volumes at Sapphire Pointe Boulevard (intersection 16) and Canyonside Boulevard (intersection 17) were compared against warrants established by the Manual on Uniform Traffic Control Devices (MUTCD) Section 4C and were found to exceed the thresholds established for the Peak Hour Warrant. Peak Hour Warrant evaluations for intersections can be found in **Appendix D**. Therefore, these intersections are assumed to be signalized. Two through lanes should be provided in each direction on Crowfoot Valley Road. A dedicated eastbound left-turn lane should be constructed at each intersection, with protected/permitted phasing provided. Westbound right-turn movements can be made from a shared lane at Sapphire Pointe Boulevard but should be given a dedicated lane at Canyonside Boulevard. Finally, southbound left-turn and right-turn movements should be made from separate lanes. The traffic signal at Canyonside Boulevard is a committed improvement per Appendix G of The Canyons Annexation and Development Agreement. Improvements at Sapphire Point Boulevard are anticipated to be completed by others.

Figure 5 displays recommended improvements and associated changes in traffic operations for long-term background traffic conditions.

[4] *December 20, 2017 memo from Ann Bowers (Fehr & Peers) to Shea Canyons*, Table 3 (page 5) and Figure 2.
[5] Ibid, Table 4 (page 7) and Figure 3.

III. CANYONS 2ND PD AMENDMENT DEVELOPMENT

The 2nd Amendment to The Canyons PD would add 1,500 new residential DUs and allocate 90 KSF of commercial development south of Shea Canyons and north of Crowfoot Valley Road. Additionally, this development may include a 2,500-student flagship high school. As described earlier, the proposed development will be distributed across seven planning areas that will require access to the external roadway network. The following sections describe the planned new roadways and site accesses as well as anticipated traffic volumes from these land uses.

III.A. Development Phasing

The proposed development was broken into two phases, both of which are assumed to be built out in the long-term scenario. The residential and commercial portions of the 2nd PD Amendment development were analyzed in the first phase. Since it will be built and operated by others, the proposed high school was separated into a second evaluation phase.

Several discussions regarding a regional park in The Canyons have occurred, and park land dedications were anticipated in the 2009 Planned Development. Shea Homes assumed a 42.75-acre park in their 2017 traffic impact study, which represents approximately three quarters of the 56 acres shown in the Shea Homes portion of the PD as park land dedication (PA-K and part of PA-I). For the purposes of this PD Amendment, the entire 74 acres in Planning Area I (including 40 acres in the Shea Homes area and 34 acres in The Canyons) were reviewed for inclusion in the traffic impact study[6]. The AM peak total trip generation for a 74-acre park is one vehicle, and the PM peak total trip generation is 27 vehicles. Given that these values are less than 1% of the previously approved trip generation and the fact that a portion of the PA-I park was reflected in the Shea Canyons TIS, this TIS did not further evaluate trip generation for the regional park.

III.B. Proposed Site Accesses

The primary access to each of the planning areas in the 2nd PD Amendment development will come from Canyonside Boulevard. Since internal planning area roadway concepts have not been developed, two full-movement access points along Canyonside Boulevard were analyzed in this TIS addendum. The access to PA-13 (intersection 18) was chosen as it is expected to serve PA-12, PA-13, and possibly PA-10, or approximately 371 acres. It may also ultimately serve the proposed high school. The south access to PA-14 and PA-15 (intersection 19) was also analyzed as it is expected to serve approximately 228 acres. The remaining four planning areas total less than 120 acres. As such, Canyonside Boulevard access for these smaller planning areas can be evaluated during site plan approval. Intersections 18 and 19 were chosen to determine the potential for signalization along Canyonside Boulevard through the proposed development. Each of these intersections were initially evaluated with two-way stop control.

A cross connection is proposed between PA-15 and the Sapphire Pointe residential subdivision at Cinnabar Drive. This connection will allow residents at the north end of Sapphire Pointe access Canyonside Boulevard rather than winding through residential streets in Sapphire Point. Due to the circuitous nature of the Sapphire Point street network and the longer travel distance from the PA 14 / PA-15 area when compared to Canyonside Boulevard, no Canyons traffic was assumed to use this connection.

[6] This review was performed using ITE Land Use Code 411 – Public Park. Note that ITE Land Use Code 412 - County Park (used in the Shea Canyons TIS) has been removed from the current edition of the ITE Trip Generation Manual.

III.C. Site Trip Generation

Like the original North Canyons TIS, traffic volumes generated by land uses in the 2nd PD Amendment Development were determined based on data from *Trip Generation, Institute of Transportation Engineers (ITE), 10th Edition (2017)*. Reasonable commercial and residential development assumptions were made based on the approved PD and the current vision for the 2nd PD Amendment development to allow for the application of specific ITE land use categories. As developments are identified within the 2nd PD Amendment planning areas over the long-term horizons, these assumptions will need to be refined. Like the original TIS, no credits were taken from the site-trip generation for pass-by trips, however, it was assumed that there would be some internal capture of trips with other uses in The Canyons. Using information from North Canyons, the 1st PD Amendment, the 2nd PD Amendment, and the *Trip Generation Handbook, Institute of Transportation Engineers, 3rd Edition (2017)*, it was determined that approximately 12% of daily trips, 2% of AM trips, and 32% of PM trips generated by Phase I of the 2nd PD Amendment development will be captured internally by other land uses within The Canyons.

Table 2 displays trip generation characteristics of land uses proposed in the 2nd PD Amendment for The Canyons.

Table 2. 2nd PD Amendment Trip Generation Summary

PA	Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Phase I									
13	Single-Family Residential	375 DU	3,510	68	204	272	228	134	362
	Multi-Family Residential	96 DU	685	11	35	46	36	21	57
14	Single-Family Residential	426 DU	3,945	77	231	308	258	151	409
	Multi-Family Residential	51 DU	345	6	20	26	21	12	33
15	Single-Family Residential	70 DU	750	14	41	55	46	27	73
16	Single-Family Residential	100 DU	1,040	19	57	76	64	38	102
17	Single-Family Residential	41 DU	460	9	25	34	28	16	44
	Multi-Family Residential	68 DU	475	8	26	34	26	16	42
18	Multi-Family Residential	167 DU	1,040	17	54	71	55	33	88
19	Multi-Family Residential	106 DU	670	11	36	47	37	22	59
	Commercial – Retail	90 KSF	5,600	122	75	197	241	262	503
Gross Vehicle-Trips (Phase I)			***18,520***	***362***	***804***	***1,166***	***1,040***	***732***	***1,772***
Internal Capture Trip Reduction			2,290	14	14	28	285	285	570
Net Vehicle-Trips (Phase I)			***16,230***	***348***	***790***	***1,138***	***755***	***447***	***1,202***

As a result, the proposed Phase I development would generate about 16,230 daily external vehicle-trips. It would generate approximately 1,140 external trips during the AM peak hour (31% in, 69% out), and 1,200 external trips during the PM peak hour (63% in, 37% out).

III.D. Trip Distribution and Traffic Assignment

Using information from the DRCOG regional traffic model and previous traffic analysis reports for The Canyons, the following distribution of traffic was assumed for external vehicle-trips generated by the 2nd PD Amendment development:

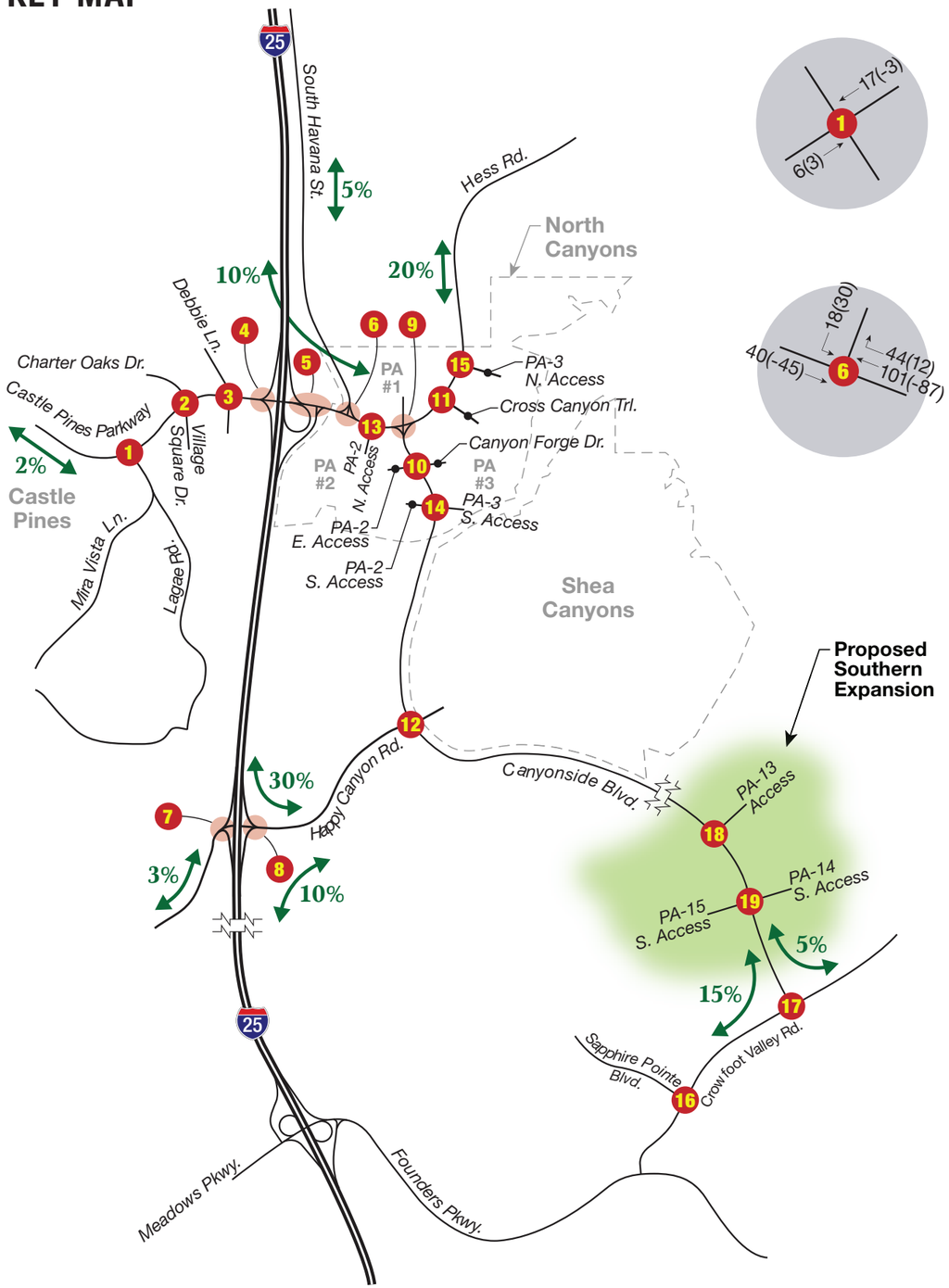
- Castle Pines Parkway (West of I-25): 2%
- I-25 North (via Castle Pines Parkway): 10%
- I-25 North (via Happy Canyon Road): 30%
- I-25 South (via Happy Canyon Road): 10%
- Happy Canyon Road (West of I-25): 3%
- Havana Street (North of Castle Pines Parkway): 5%
- Hess Road (East of Canyonside Boulevard: 20%
- Crowfoot Valley Road (West of Canyonside Boulevard): 15%
- Crowfoot Valley Road (East of Canyonside Boulevard): 5%

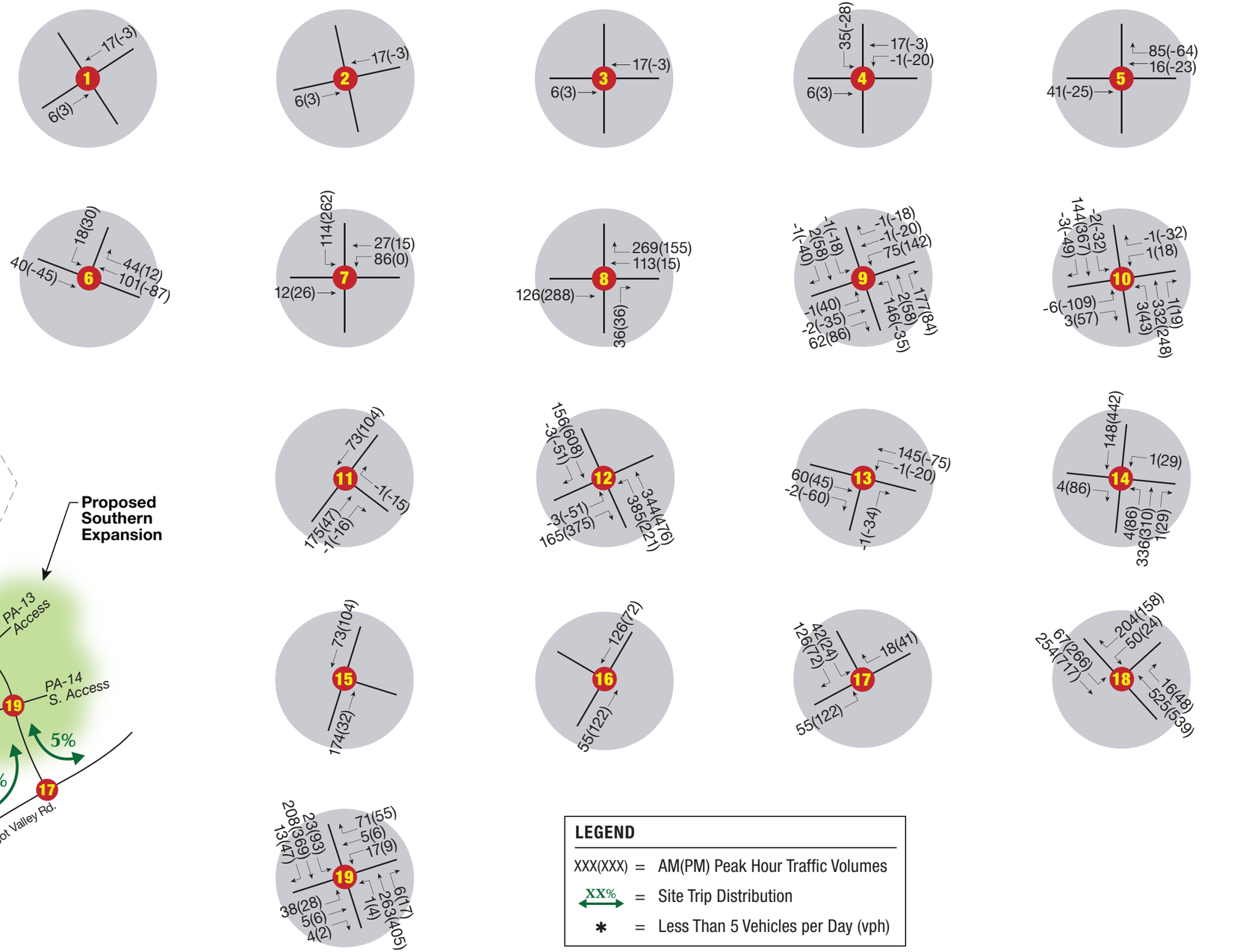
Internal trips between the planning areas in the 2nd PD Amendment development and other portions of The Canyons (including Shea Canyons) were assigned to the roadway network separately from the net vehicle-trips using engineering judgment to determine the shortest paths between origins and destinations.

Figure 6 displays the external vehicle-trip distribution characteristics and traffic assignment assumptions of all vehicle-trips generated by the Canyons 2nd PD Amendment development for Phase I. The internal capture of vehicle-trips between portions of The Canyons results in reductions of turning movements in numerous intersections throughout the study area. These are shown as negative values on **Figure 6**.

The vehicle imbalance shown on Canyonside Boulevard between Happy Canyon Road and the PA-13 Access (intersection 18) and between the PA-13 Access (intersection 18) and the PA-14/PA-15 Access (intersection 19) results from the addition of traffic from the Canyons 2nd PD Amendment development at site accesses that were not evaluated in this TIS. These trips were assigned to the network based on the anticipated land uses surrounding each access and the overall external trip distribution assumptions shown in **Figure 6**. Future site-specific traffic studies will address additional site access intersections and provide more detail regarding trips that access Canyonside Boulevard between the intersections evaluate in this study.

KEY MAP





LEGEND

XXX(XXX)	=	AM(PM) Peak Hour Traffic Volumes
XX%	=	Site Trip Distribution
*	=	Less Than 5 Vehicles per Day (vph)

NOTE: Drawing Not to Scale

NORTH

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FIGURE 6

Long-Term Site Trip Distribution and Traffic Assignment

IV. TOTAL TRAFFIC CONDITIONS

Total traffic is determined by adding site-generated traffic to background traffic. As a result of the buildout of the 2nd PD Amendment development, access to Canyonside Boulevard from PA-13 through PA-19 will be constructed to serve site-generated traffic. Improvements recommended to serve the background traffic condition were assumed in the base total traffic evaluations.

IV.A. Traffic Volumes

Total traffic volumes over the bridge between I-25 ramps on Castle Pines Parkway are approximately 4,065 in the AM peak hour (61% EB, 39% WB) and 4,230 in the PM peak hour (58% EB, 42% WB). Happy Canyon Road serves nearly 1,935 vph during the AM peak hour (50% EB, 50% WB), and nearly 2,695 vph during the PM peak hour (58% EB, 42% WB) between the I-25 ramps. South of Shea Canyons, Canyonside Boulevard serves approximately 2,045 vph during the AM peak hour (65% NB, 45% SB) and 2,855 vph in the PM peak hour (41% NB, 59% SB). Finally, Crowfoot Valley Road west of Canyonside Boulevard serves nearly 2,590 vph during the AM peak hour (45% EB, 55% WB), and 3,065 vph during the PM peak hour (50% EB, 50% WB). Long-term total traffic turning movements are shown on **Figure 7**.

IV.B. Traffic Operations

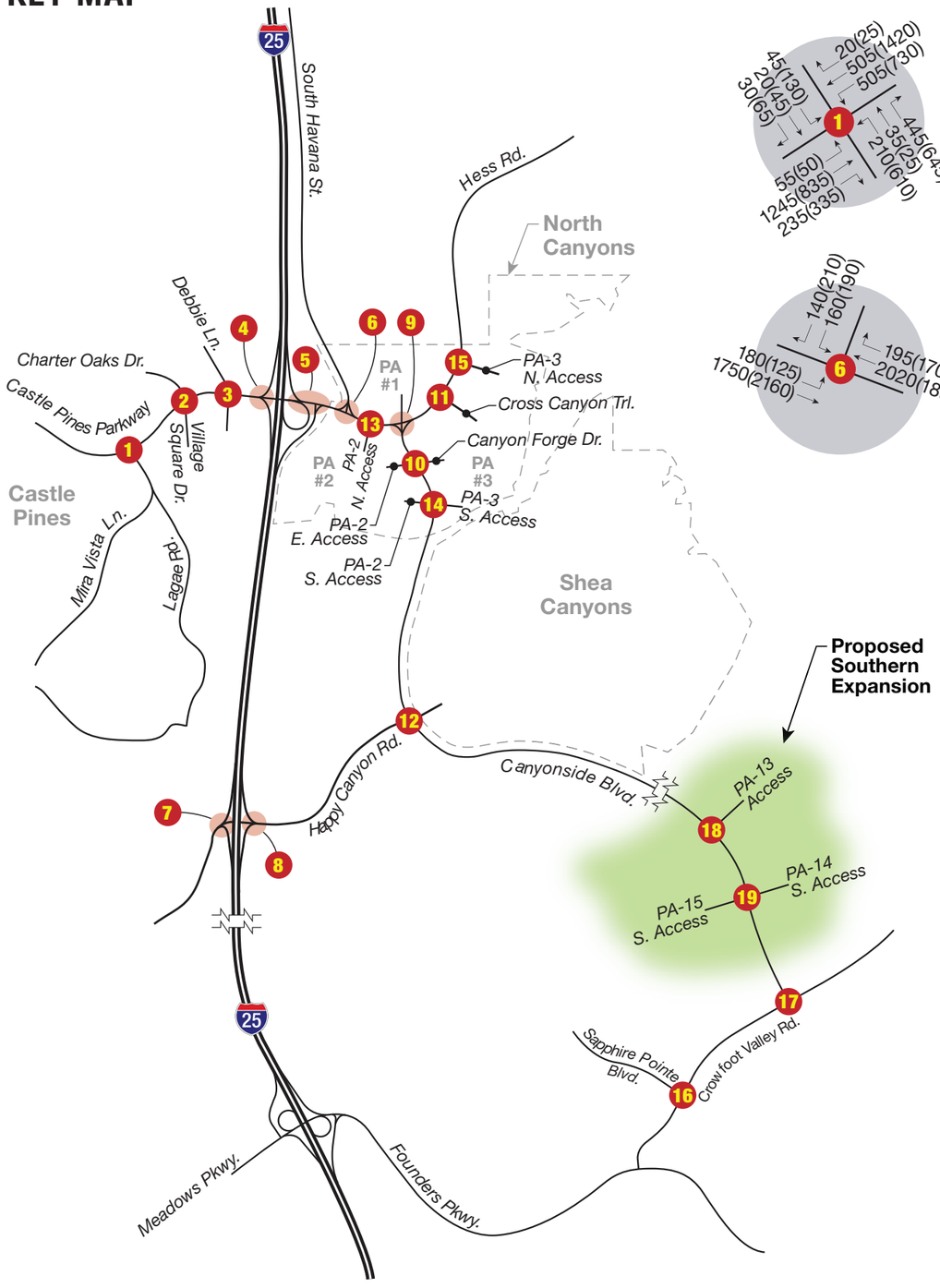
Most signalized intersections operate at acceptable LOS total traffic condition, with some exceptions. The Happy Canyon & I-25 Southbound Ramp intersection operates at LOS E in the PM peak hour, while the Happy Canyon & I-25 Northbound Ramp intersection operates at LOS E in the AM peak hour. Also, Happy Canyon Road & Canyonside Boulevard operates at LOS E during the AM peak hour.

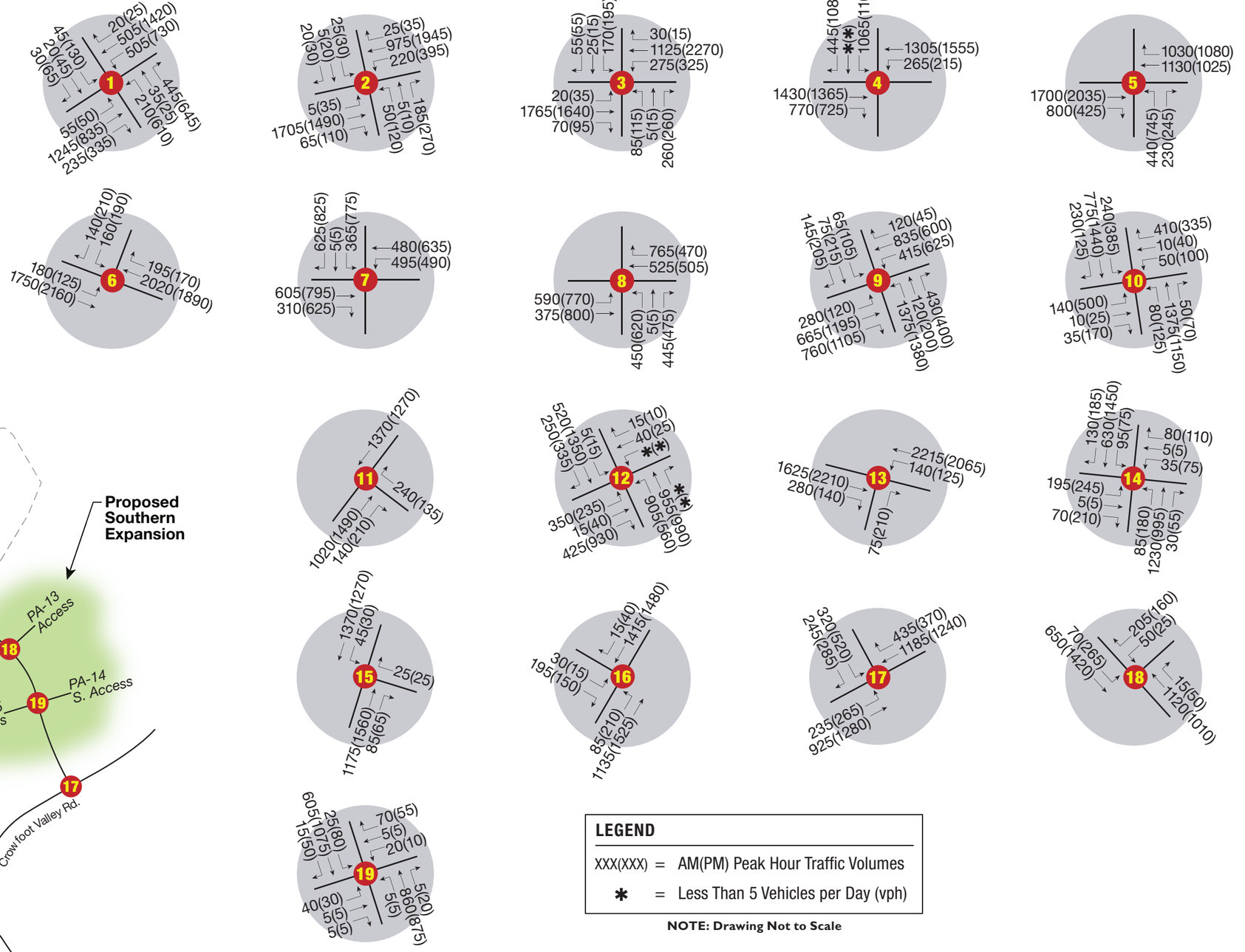
Additionally, some intersection movements experience poor operations (LOS F) in the total traffic condition despite acceptable overall intersection LOS. The northbound through and right-turn movements at Canyonside Boulevard & Canyon Forge Drive operate at LOS F during the both peak hours. The eastbound left-turn movement at Crowfoot Valley Road & Canyonside Boulevard operates at LOS F during the PM peak hour. Westbound left-turns at the PA-13 access to Canyonside Boulevard (intersection #18) operate at LOS F with unsignalized traffic control. Similarly, minor street movements the Canyonside Boulevard & PA-14/PA-15 South Access intersection operate at LOS F during both peak hours. **Figure 8** displays long-term total traffic operations, including LOS and intersection geometries at each study intersection.

IV.C. Recommended Improvements

Beyond those made to provide adequate LOS for background traffic, improvements to the roadway network should be made to accommodate the addition of site-generated traffic in the total traffic condition. Previous analysis of North Canyons and the 1st PD Amendment indicated that Phase 2 improvements identified in the Happy Canyon Interstate Access Request (IAR) would be necessary to serve long-term traffic volumes. LOS E operations in the AM peak hour at the northbound ramp terminal and in the PM peak hour at the southbound ramp terminal in the AM peak hour suggests that additional analysis should be performed when the ultimate Happy Canyon interchange design configuration is chosen. Additional southbound left-turn capacity via a second lane and westbound right-turn capacity, possibly through channelization, may be suitable improvements. Given the planned roundabout to the west of the interchange, roundabout options within the interchange should be considered, as noted in the IAR. Given the unknowns associated with the interchange, this study cannot make formal recommendations. Hence, The Canyons is proposing a further financial contribution to the interchange reconstruction. Based on the analyses performed for this 2nd PD Amendment, The Canyons is proposing to contribute up to an additional 3% of the cost of the interchange improvements, based on current and forecasted traffic volumes at the time of the interchange improvement project.

KEY MAP





LEGEND

XXX(XXX)	=	AM(PM) Peak Hour Traffic Volumes
*	=	Less Than 5 Vehicles per Day (vph)

NOTE: Drawing Not to Scale

NORTH

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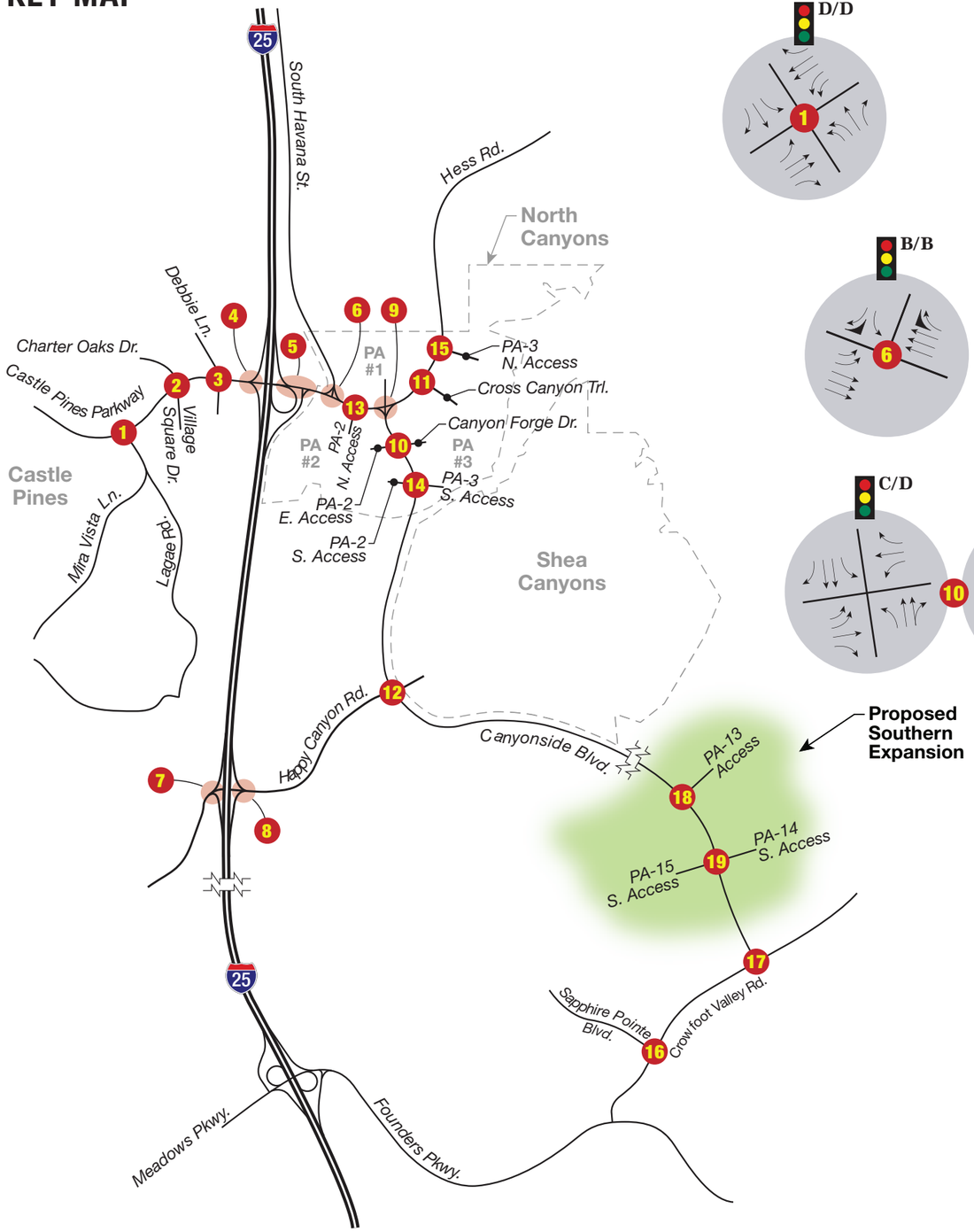
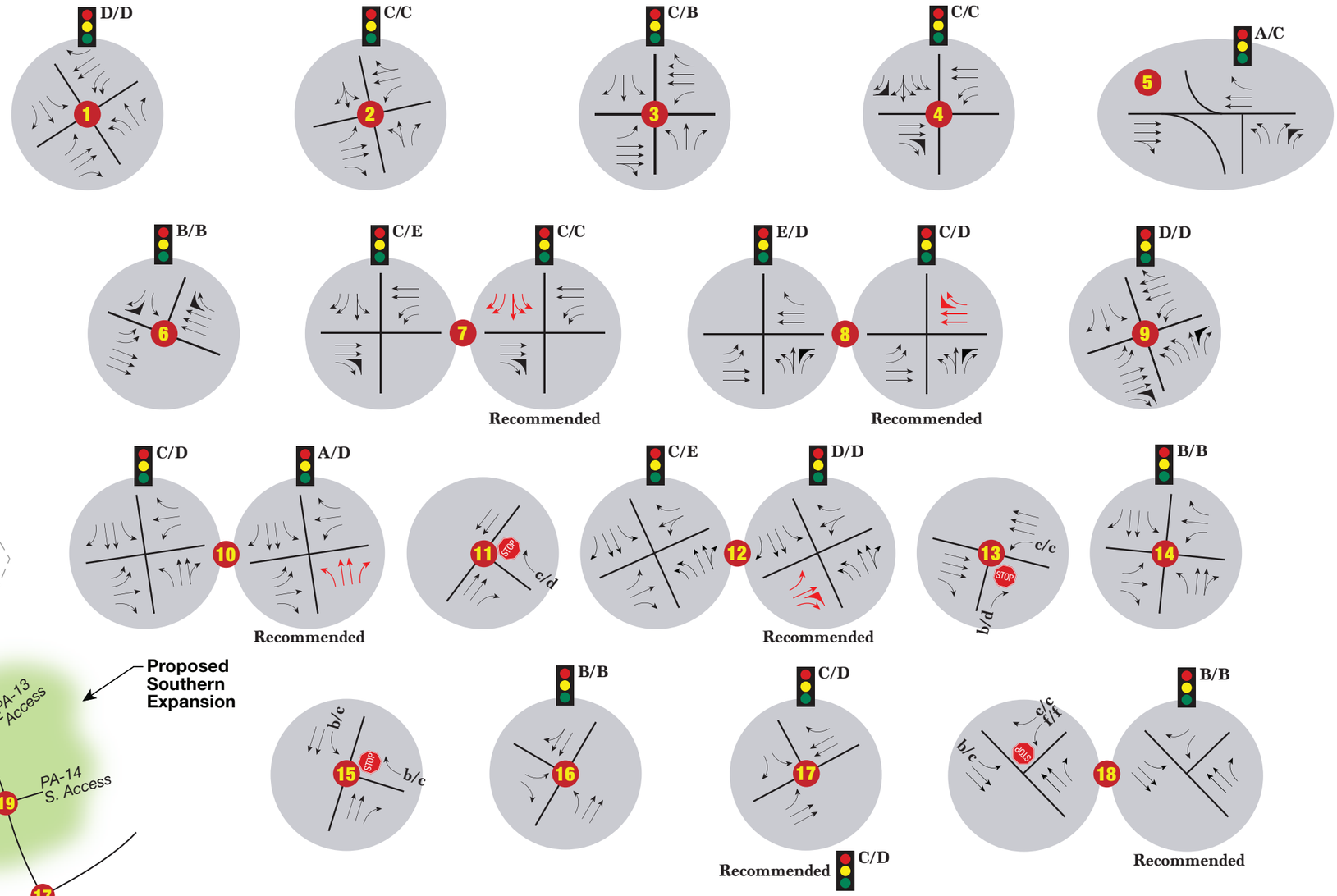
FIGURE 7
Long-Term Total Traffic Volumes

KEY MAP





LEGEND

X/X	=	AM/PM Peak Hour Signalized Intersection Level of Service
x/x	=	AM/PM Peak Hour Unsignalized Intersection Level of Service
STOP	=	Stop Sign
	=	Traffic Signal
	=	Recommended Improvements

NORTH

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FIGURE 8
Long-Term Total Traffic Operations

To mitigate eastbound right-turn vehicle queues, a continuous acceleration/deceleration lane should be constructed on southbound Canyonside Boulevard between Hess Road and Canyon Forge Drive. The lane would be terminated as the southbound right-turn lane at Canyon Forge Drive. To accommodate the northbound traffic at Canyonside Boulevard & Canyon Forge Drive, a dedicated northbound right-turn lane should be constructed.

The eastbound right-turn lane at Happy Canyon Road & Canyonside Boulevard should be channelized and given an acceleration lane for free movements. Additionally, the peak hour signal cycle length at this intersection should be increased to 120 seconds. The cycle length at Crowfoot Valley Road & Canyonside Boulevard should also be increased to 120 seconds.

Forecasted traffic volumes and operations at the PA-13 access indicated that two-way stop control will not be sufficient for the long-term future. Traffic volumes were compared against MUTCD warrants and were found to exceed the threshold established for the Peak Hour Warrant. Therefore, this intersection should be signalized. Because multiple minor street movements at the PA-14/PA-15 South Access operate at LOS F during peak hours, traffic volumes for this intersection were also compared to MUTCD warrants. However, the forecasted volumes will not meet MUTCD thresholds in the long-term total traffic condition. As development plans for the 2nd PD Amendment are submitted, this intersection and others along Canyonside Boulevard should be reevaluated to determine potential for signalization. Peak Hour Warrant evaluations for intersections can be found in **Appendix D**.

For the Canyonside Boulevard & PA-13 Access, one southbound left-turn lane should be provided as well as two through lanes. The northbound approach should include two dedicated through lanes and a separate right-turn lane. The westbound approach should include separate left-turn and right-turn lanes. Protected/permitted phasing should be provided for southbound left-turns. With these improvements, the PA-13 access intersection will operate at LOS B during both peak hours.

Figure 8 also displays recommended improvements and associated changes in traffic operations for long-term total traffic conditions.

IV.D. Queueing and Storage Recommendations

As with the North Canyons TIS, 95th percentile queue lengths for traffic movements at study intersections were evaluated for the total traffic condition and used to develop recommendations for storage lanes. **Table 3** displays 95th percentile queue results, as well as existing and recommended storage lane lengths.

Table 3. Total Traffic Queues and Storage Recommendations

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	North Canyons TIS / Existing Storage Length (feet)	Recommended Storage Length (feet)
1	Castle Pines Parkway & Lagae Road	EBLT	34 (38)	200	*No Change*
		EBT	#818 (#618)	Continuous	*No Change*
		EBRT	51 (101)	240	*No Change*
		WBLT	224 (m262)	275	*No Change*
		WBT	233 (m#814)	Continuous	*No Change*
		WBRT	m1 (m0)	100	*No Change*
		NBLT	122 (#381)	400	*No Change*

Table 3. Total Traffic Queues and Storage Recommendations

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	North Canyons TIS / Existing Storage Length (feet)	Recommended Storage Length (feet)
1	Castle Pines Parkway & Lagae Road	NBT	54 (45)	Continuous	*No Change*
		NBRT	166 (450)	Continuous	*No Change*
		SBLT	52 (123)	100	125
		SBT	33 (71)	Continuous	*No Change*
		SBRT	0 (0)	50	*No Change*
2	Castle Pines Parkway & Village Square Drive	EBLT	m1 (m12)	260	*No Change*
		EBT	#956 (m665)	Continuous	*No Change*
		EBRT	m0 (m4)	200	*No Change*
		WBLT	m203 (#580)	Continuous	*No Change*
		WBT/WBRT	173 (#1113)	Continuous	*No Change*
		NBLT/NBT	78 (165)	175	*No Change*
		NBRT	110 (189)	Continuous	*No Change*
		SBLT/SBT/SBRT	44 (82)	Continuous	*No Change*
3	Castle Pines Parkway & Debbie Lane	EBLT	m5 (m5)	130	*No Change*
		EBT/EBRT	m245 (#635)	Continuous	*No Change*
		WBLT	295 (m328)	390	*No Change*
		WBT/WBRT	155 (421)	Continuous	*No Change*
		NBLT	113 (132)	150	*No Change*
		NBT	15 (34)	Continuous	*No Change*
		NBRT	202 (194)	225	*No Change*
		SBLT	#214 (221)	Continuous	*No Change*
		SBT	44 (32)	Continuous	*No Change*
		SBRT	0 (0)	75	*No Change*
4	Castle Pines Parkway & I-25 SB Ramps	EBT	m259 (#390)	Continuous	*No Change*
		EBRT	m122 (m234)	Continuous	*No Change*
		WBLT	#223 (m129)	515	*No Change*
		WBT	414 (617)	Continuous	*No Change*
		SBLT	#445 (#522)	400	525
		SBLT/SBT	#523 (#597)	Continuous	*No Change*
		SBRT	0 (0)	350	*No Change*
5	Castle Pines Parkway & I-25 NB Ramps	EBT	m193 (m376)	Continuous	*No Change*
		EBRT	m9 (m15)	N/A	*No Change*
		WBT/WBRT	73 (52)	Continuous	*No Change*

Table 3. Total Traffic Queues and Storage Recommendations

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	North Canyons TIS / Existing Storage Length (feet)	Recommended Storage Length (feet)
5	Castle Pines Parkway & I-25 NB Ramps	NBLT	225 (362)	Continuous (L) / 715 (R)	*No Change*
		NBRT	122 (123)	630 (L) / 550 (R)	*No Change*
6	Castle Pines Parkway/ Hess Road & Havana Street	EBLT	#179 (m75)	340	*No Change*
		EBT	107 (95)	Continuous	*No Change*
		WBT	77 (m249)	Continuous	*No Change*
		WBRT	m0 (m11)	Continuous	*No Change*
		SBLT	195 (228)	Continuous	*No Change*
		SBRT	135 (44)	450	*No Change*
7	Happy Canyon Road & I-25 SB Ramps	EBT	309 (#423)	Continuous	*No Change*
		EBRT	71 (104)	250	*No Change*
		WBLT	m230 (m#309)	175 (L) / Continuous (R)*	*No Change**
		WBT	m54 (m282)	Continuous	*No Change*
		SBLT	192 (395)	--	400
		SBLT/SBT	189 (404)	Continuous	*No Change*
		SBRT	336 (440)	275	450
8	Happy Canyon Road & I-25 NB Ramps	EBLT	#353 (m292)	200 (L) / Continuous (R)*	*No Change**
		EBT	33 (m138)	Continuous	*No Change*
		WBT	m64 (m291)	Continuous	*No Change*
		WBRT	225 (m279)	125	300
		NBLT	#322 (#374)	325	375
		NBLT/NBT	#311 (#398)	Continuous	*No Change*
		NBRT	0 (0)	250	*No Change*
9	Hess Road & Canyonside Boulevard	EBLT	167 (m72)	175	*No Change*
		EBT	224 (#488)	Continuous	*No Change*
		EBRT	19 (397)	Continuous	400
		WBLT	#281 (#565)	300	575
		WBT	321 (206)	Continuous	*No Change*
		WBT/WBRT	321 (206)	50	100
		NBLT	m#485 (m#517)	425 (L, C) / Continuous (R)	500 (L, C) / Continuous (R)
		NBT	m86 (m185)	Continuous	*No Change*
		NBRT	m104 (m175)	125	175

Table 3. Total Traffic Queues and Storage Recommendations

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	North Canyons TIS / Existing Storage Length (feet)	Recommended Storage Length (feet)
9	Hess Road & Canyonside Boulevard	SBLT	101 (140)	175	*No Change*
		SBT	#121 (#329)	Continuous	*No Change*
		SBRT	33 (83)	150	*No Change*
10	Canyonside Boulevard & Canyon Forge Drive/ PA-2 East Access	EBLT	92 (#322)	350 (L) / Continuous (R)	*No Change*
		EBT	23 (47)	Continuous	*No Change*
		EBRT	0 (84)	75	100
		WBLT	79 (#156)	125	175
		WBT	26 (69)	Continuous	*No Change*
		WBRT	360 (273)	350	375
		NBLT	m25 (m#177)	75	200
		NBT	#907 (#655)	Continuous	*No Change*
		NBRT	m0 (m0)	--	100
		SBLT	m127 (m#309)	325	*No Change*
		SBT	m162 (m550)	Continuous	*No Change*
		SBRT	m18 (m20)	75	*No Change*
11	Hess Road & Cross Canyon Trail	EBRT	0 (0)	Continuous	*No Change*
		NBRT	85 (60)	Continuous	*No Change*
12	Happy Canyon Road & Canyonside Boulevard	EBLT	#497 (#367)	Continuous	*No Change*
		EBT	m22 (50)	Continuous	*No Change*
		EBRT	0 (371)	125	400
		WBLT/WBT	59 (49)	50	75
		WBRT	0 (0)	Continuous	*No Change*
		NBLT	#500 (#336)	150	500
		NBT/NBRT	287 (#215)	Continuous	*No Change*
		SBLT	19 (23)	50	*No Change*
		SBT	281 (#733)	Continuous	*No Change*
		SBRT	69 (108)	225	*No Change*
13	Hess Road & PA-2 North Access	EBRT	0 (0)	50	*No Change*
		WBLT	43 (33)	50	*No Change*
		NBRT	13 (90)	Continuous	*No Change*
14	Canyonside Boulevard & PA-2/3 South Access	EBLT	224 (255)	250	275
		EBT	6 (9)	Continuous	*No Change*
		EBRT	15 (66)	50	75

Table 3. Total Traffic Queues and Storage Recommendations

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	North Canyons TIS / Existing Storage Length (feet)	Recommended Storage Length (feet)
14	Canyonside Boulevard & PA-2/3 South Access	WBLT	52 (84)	50	100
		WBT	7 (19)	Continuous	*No Change*
		WBRT	23 (25)	50	*No Change*
		NBLT	42 (177)	50	200
		NBT/NBRT	540 (454)	Continuous	*No Change*
		SBLT	84 (m29)	50	100
		SBT	115 (#915)	Continuous	*No Change*
		SBRT	6 (m26)	50	*No Change*
15	Hess Road & PA-3 North Access	EBRT	0 (0)	50	*No Change*
		WBLT	5 (8)	50	*No Change*
		NBRT	8 (8)	Continuous	*No Change*
16	Crowfoot Valley Road & Sapphire Pointe Boulevard	EBLT	40 (137)	560	150
		EBT	197 (339)	Continuous	*No Change*
		WBT/WBRT	480 (#717)	Continuous	*No Change*
		SBLT	37 (24)	250	*No Change*
		SBRT	55 (35)	Continuous	*No Change*
17	Crowfoot Valley Road & Canyonside Boulevard	EBLT	#252 (#343)	--	350
		EBT	241 (472)	--	Continuous
		WBT	565 (#717)	--	Continuous
		WBRT	224 (226)	--	225
		SBLT	#369 (#671)	--	Continuous
		SBRT	65 (94)	--	Continuous
18	Canyonside Boulevard & PA-13 Access	WBLT	60 (37)	--	75
		WBRT	85 (56)	--	Continuous
		NBT	288 (319)	--	Continuous
		NBRT	9 (19)	--	50
		SBLT	22 (92)	--	100
		SBT	88 (217)	--	Continuous
19	Canyonside Boulevard & PA-14/15 South Access	EBLT/EBT/EBRT	45 (110)	--	Continuous
		WBLT/WBT/ WBRT	43 (73)	--	Continuous
		NBLT	0 (0)	--	50
		NBT/NBRT	0 (0)	--	Continuous

Table 3. Total Traffic Queues and Storage Recommendations

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	North Canyons TIS / Existing Storage Length (feet)	Recommended Storage Length (feet)
19	Canyonside Boulevard & PA-14/15 South Access	SBLT	3 (13)	--	50
		SBT/SBRT	0 (0)	--	Continuous

Notes: Movements are identified first by direction then by movement (i.e., EBLT: Eastbound left-turn)
EB: Eastbound; **WB:** Westbound; **NB:** Northbound; **SB:** Southbound
LT: Left-turn; **T:** Through; **RT:** Right-turn
#: 95th percentile volume exceeds capacity
m: Volume for 95th percentile queue is metered by an upstream signal
***:** Interchange requires further study

IV.E. Progression and Bandwidth

Using methods identified in the North Canyons TIS, a progression evaluation was performed for the total traffic condition to optimize bandwidth along Castle Pines Parkway/Hess Road. Because this facility attracts/disperses users to/from I-25, the progression evaluation was separated into two corridors: west of I-25 and east of I-25. Additionally, both westbound through traffic and northbound left-turn traffic movements were prioritized at the Hess Road & Canyonside Boulevard intersection with respect to progression. **Table 4** displays progression and bandwidth results for signals on Castle Pines Parkway/Hess Road.

Table 4. Total Traffic Progression and Bandwidth

Peak Hour	Cycle Length	Castle Pine Parkway West of I-25		Hess Road East of I-25	
		EB	WB	EB	WB
AM	120 s	35 s (29.2%)	18 s (15.0%)	40 s (33.3%)	WBT: 36 s (30.0%) NBLT: 40 s (33.3%)
PM	120 s	27 s (22.5%)	47 s (39.2%)	38 s (31.7%)	WBT: 27 s (22.5%) NBLT: 41 s (34.2%)

Notes: **WBT:** Westbound Through Movement
NBLT: Northbound Left-turn Movement

As shown, progression favors one direction in each peak hour: toward I-25 in the AM peak hour and away from I-25 in the PM peak hour. A maximum bandwidth of 39% (47 seconds) was achieved for westbound traffic west of I-25 in the PM peak hour and 34% (41 seconds) for northbound-to-westbound traffic east of I-25 in the PM peak hour. East of I-25, bandwidth is limited by green time at the Hess Road & Canyonside Boulevard intersection. Including northbound left-turns; westbound traffic east of I-25 can achieve a bandwidth of 63% in the AM peak hour and 57% in the PM peak hour.

The progression results shown in **Table 4** are very similar to those shown in the original TIS. Westbound bandwidth west of I-25 increases by 5 seconds compared to the TIS. Eastbound and westbound bandwidth east of I-25 increases in the AM peak hour and decreases during the PM peak hour. Bandwidth for northbound left-turns from Canyonside Boulevard to the I-25 ramps increases slightly in both peak hours compared to the TIS. These slight changes are attributed to signal timing changes needed to accommodate additional site traffic from the 2nd PD Amendment development.

V. FUTURE TRAFFIC CONDITIONS – HIGH SCHOOL

This PD Amendment will provide a school land dedication that is large enough for a future high school to be developed by Douglas County School District (DCSD). The current dedication parcel is in the southern portion of PA-13, adjacent to Canyonside Boulevard. This school would attract many vehicle trips, particularly during the AM peak hour. To determine the impacts of the proposed school on the roadway network, the 2nd PD Amendment total traffic conditions were reevaluated with the addition of a potential 2,500-student flagship high school in PA-13. This is a conservative approach, as DCSD assumes 2,000 students when planning a typical high school. All improvements recommended in the original total traffic evaluation were assumed in the new base evaluation.

V.A. Traffic Volumes

Traffic volumes for this scenario consist of total traffic volumes plus traffic generated by the proposed high school. Like the rest of the 2nd PD Amendment proposed development, vehicle-trips generated by the high school were estimated using ITE's *Trip Generation*. **Table 5** shows trip generation characteristics of the proposed 2nd Canyons PD Amendment development and the high school. As shown, the high school would generate just over 5,000 daily trips, increasing the total trip generation of the 2nd PD Amendment development by 31%. No internal trip capture was assumed for vehicle-trips generated by the high school.

Table 5. 2nd PD Amendment Trip Generation Summary with High School

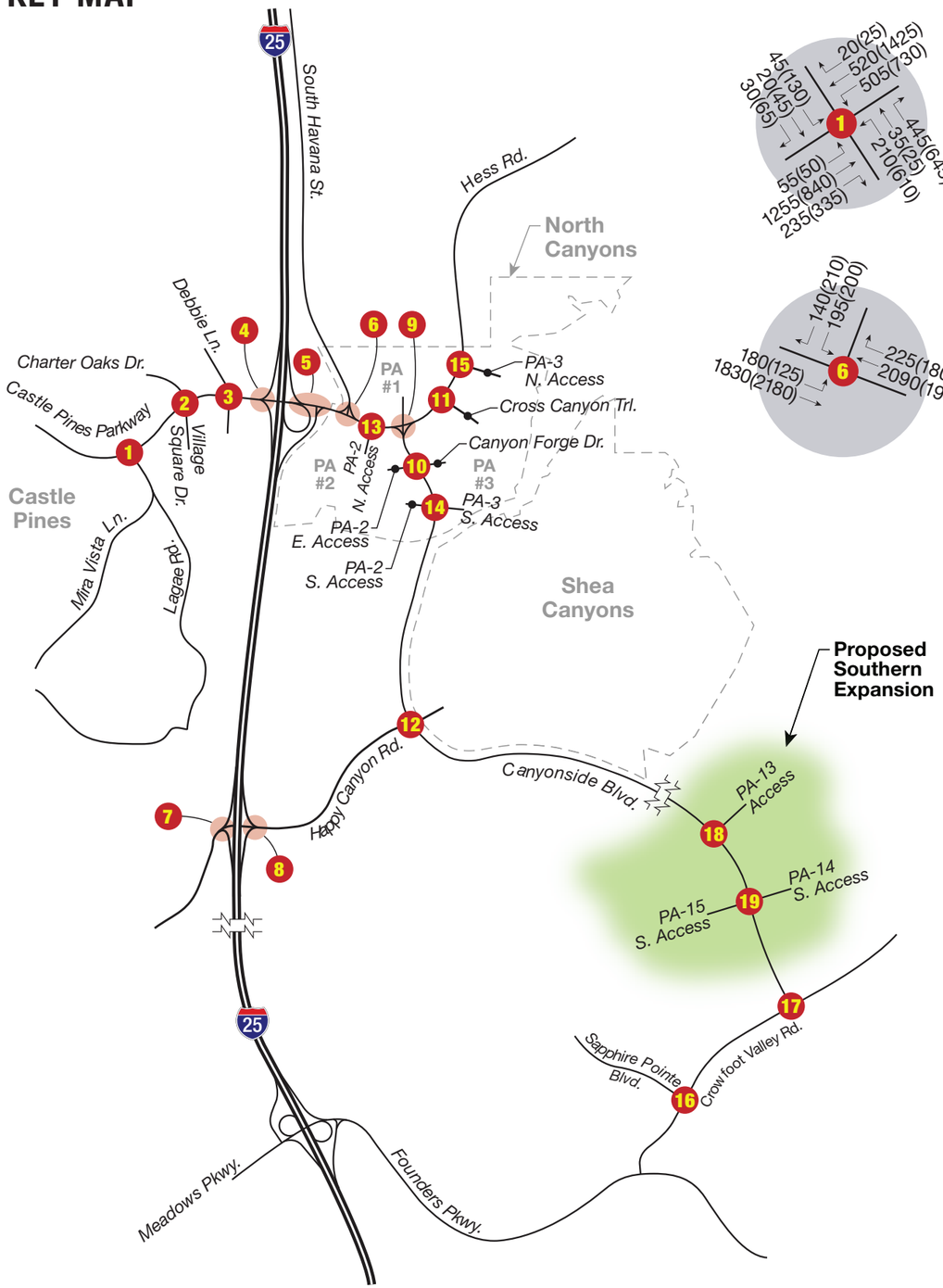
PA	Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Long Term Net Vehicle-Trips			16,230	348	790	1,138	755	447	1,202
13	High School	2,500 Students	5,075	702	598	1,300	172	178	350
Net Vehicle-Trips (with High School)			***21,305***	***1,050***	***1,388***	***2,438***	***927***	***625***	***1,552***

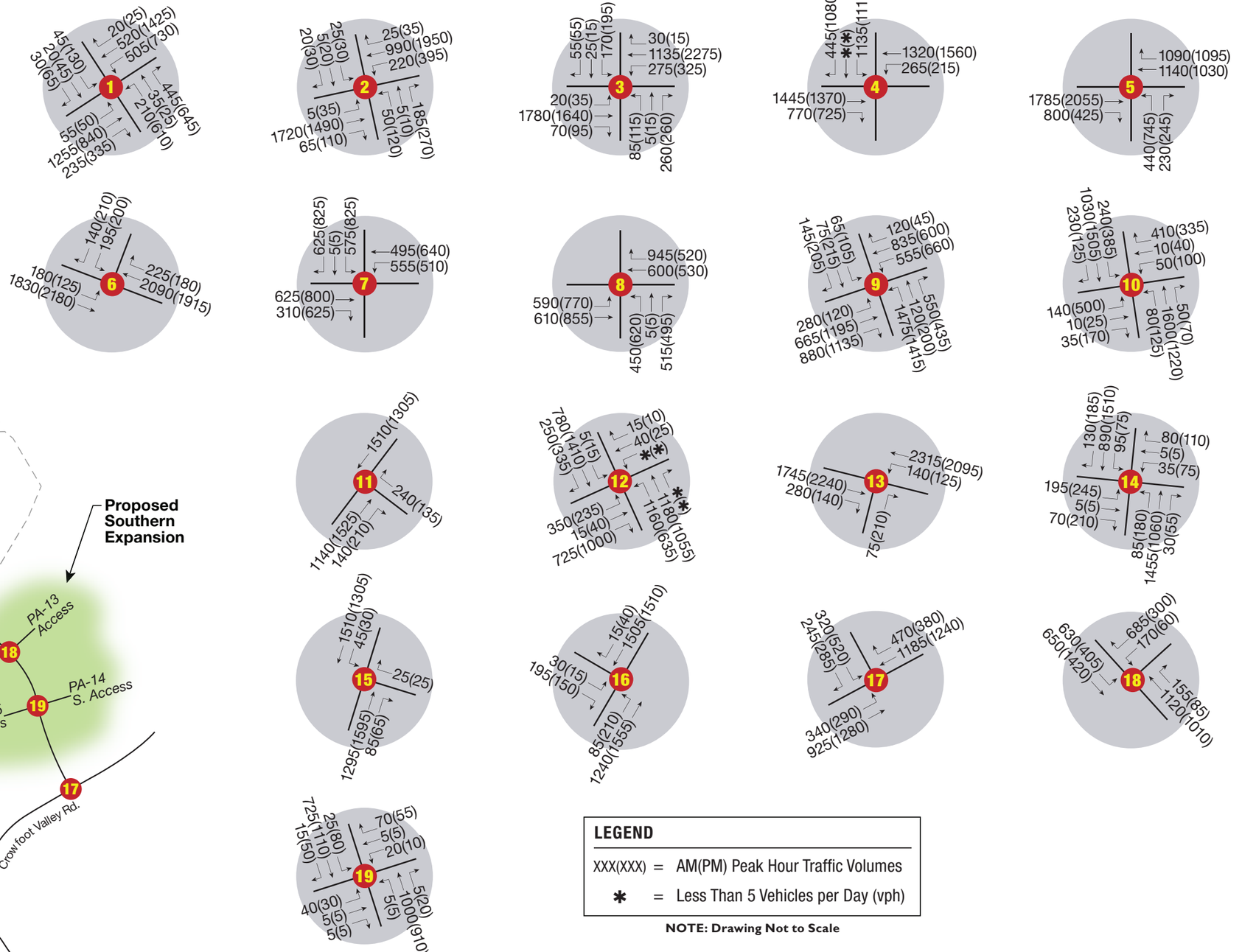
With the addition of a high school in Phase II, the 2nd PD development will generate about 21,305 daily trips, 2,440 trips in the AM peak hour (43% in, 57% out), and 1,550 trips in the PM peak hour (60% in, 40% out).

Theoretically, the high school would attract vehicle-trips from nearby residential developments. However, little information is known at this time regarding the area where the proposed high school would draw students. As such, distribution of vehicle-trips associated with the high school was assumed to be the same as other vehicle-trips in the 2nd Canyons PD Amendment development.

Total traffic volumes over the bridge between I-25 ramps on Castle Pines Parkway are approximately 4,160 in the AM peak hour (62% EB, 38% WB) and 4,255 in the PM peak hour (58% EB, 42% WB) with the addition of the high school. Happy Canyon Road serves nearly 2,250 vph during the AM peak hour (53% EB, 47% WB), and nearly 2,775 vph during the PM peak hour (59% EB, 41% WB) between the I-25 ramps. South of Shea Canyons, Canyonside Boulevard serves approximately 3,085 vph during the AM peak hour (59% NB, 41% SB) and 3,135 vph in the PM peak hour (42% NB, 58% SB). Finally, Crowfoot Valley Road west of Canyonside Boulevard serves nearly 2,785 vph during the AM peak hour (45% EB, 55% WB), and 3,115 vph during the PM peak hour (50% EB, 50% WB). Turning movements for long-term total traffic with the high school are shown on **Figure 9**.

KEY MAP





LEGEND

XXX(XXX)	=	AM(PM) Peak Hour Traffic Volumes
*	=	Less Than 5 Vehicles per Day (vph)

NOTE: Drawing Not to Scale

NORTH

FELSBURG HOLT & ULLEVIG

FIGURE 9

Long-Term Total Traffic Volumes with High School

V.B. Traffic Operations

Most signalized intersections operate at acceptable LOS in the total traffic condition with the addition of the high school to PA-13. The primary exception is the PA-13 access to Canyonside Boulevard, which would operate at LOS F during the AM peak hour.

Other intersections in the study area have specific movements that would experience LOS F despite acceptable overall intersection LOS. The southbound through movement at Hess Road & Canyonside Boulevard operates at LOS F during the PM peak hour. Similarly, the northbound left-turn movement at Canyonside Boulevard & Canyon Forge Drive operates at LOS F during the AM peak hour while the southbound left-turn movements operate at LOS F during the PM peak hour. As in the initial total traffic condition, minor street movements at the southern PA-14/PA-15 access to Canyonside Boulevard operate at LOS F during both peak hours.

Figure 10 displays long-term total traffic operations with the addition of a high school in PA-13, including LOS and intersection geometries at each study intersection.

V.C. Recommended Improvements

Due to increased traffic volumes generated by the high school, additional improvements to the roadway network should be made to accommodate the addition of site-generated traffic from the high school. The signalized PA-13 Access intersection should be modified to increase capacity. The peak hour cycle length should be increased from 90 seconds to 120 seconds. Overlap phasing should be provided for westbound right-turns. A second southbound left-turn lane should be constructed, and phasing should be changed from protected/permitted to protected-only.

Based on trip distribution assumptions, additional roadway improvements should be implemented to accommodate the addition of site-generated traffic from the high school. A second southbound through lane should be provided at the Hess Road & Canyonside Boulevard intersection to add additional capacity to the intersection. The northbound approach at Canyonside Boulevard & Canyon Forge Drive should be modified to provide a single left-turn lane, two dedicated through lanes, and a through/right-turn lane. However, until the school district defines service area boundaries for the high school, these improvements are not necessarily appropriate.

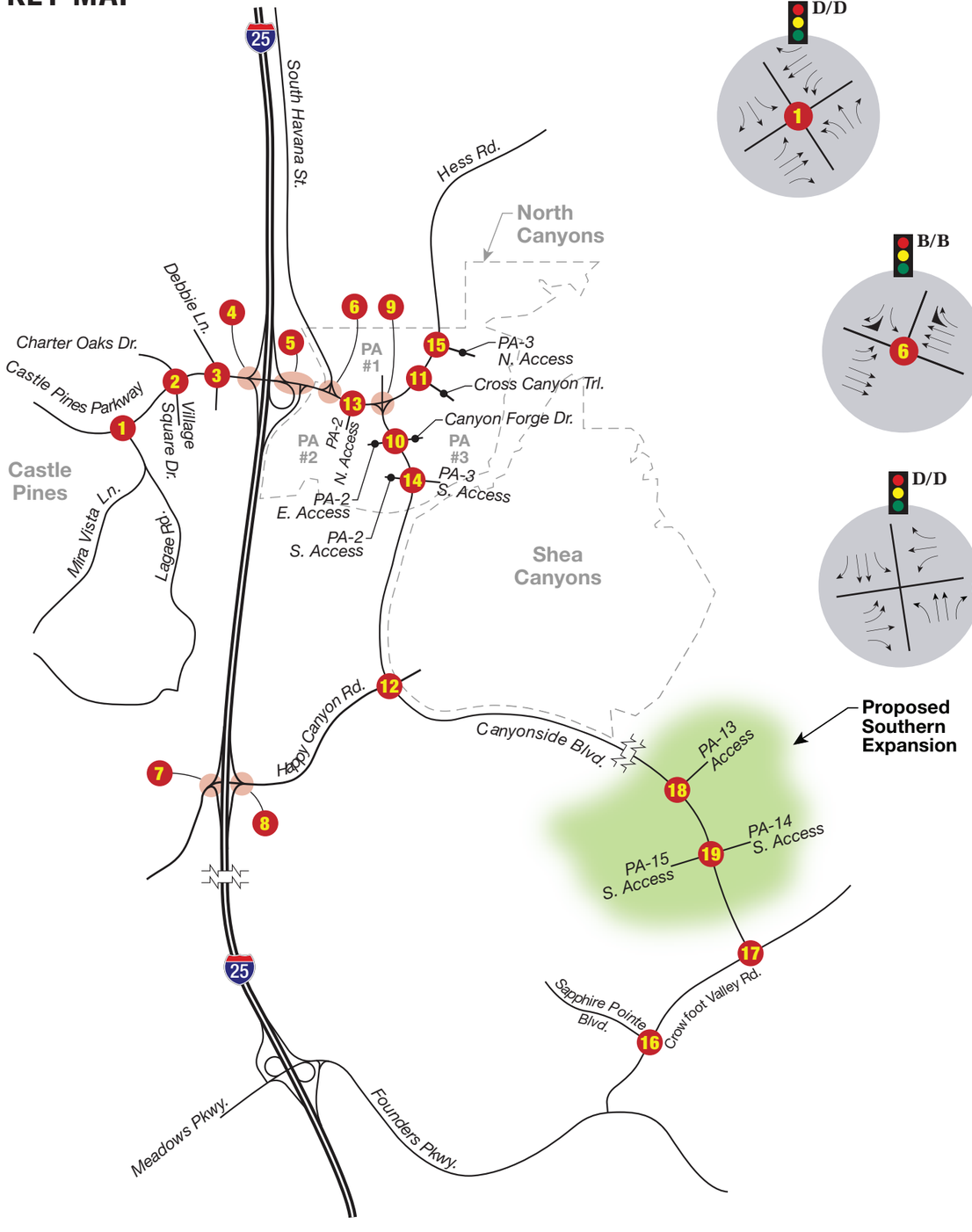
As in the initial total traffic condition, forecasted traffic volumes and operations at the PA-14/PA-15 South Access were compared against MUTCD warrants. However, the forecasted volumes will not meet MUTCD thresholds in the long-term total traffic condition with the addition of the high school. As development plans for the 2nd PD Amendment become more defined, this intersection and others along Canyonside Boulevard should be reevaluated to determine potential for signalization. Peak Hour Warrant evaluations for intersections can be found in **Appendix D**.

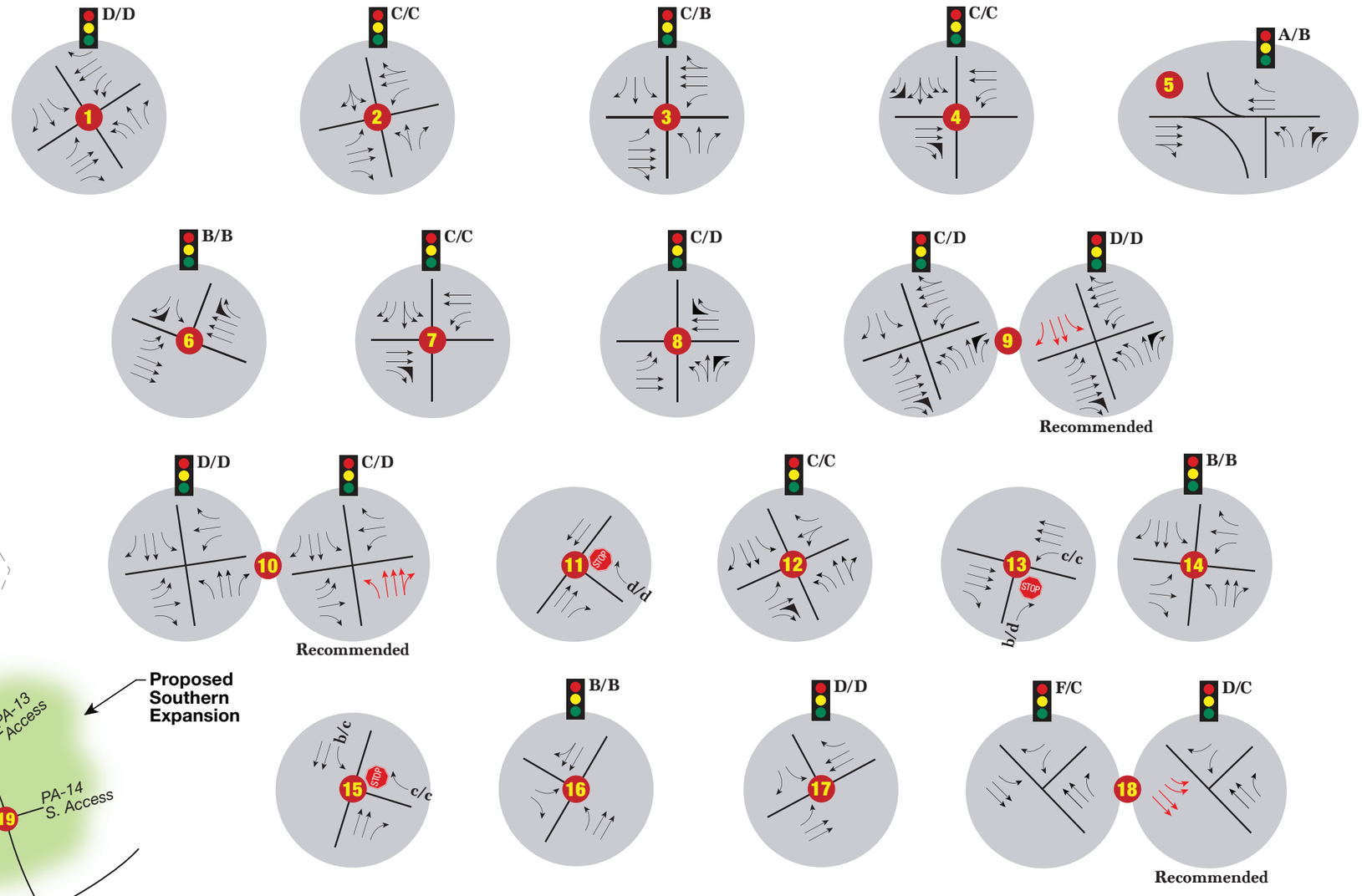
Figure 10 also displays recommended improvements and associated changes in traffic operations for long-term total traffic conditions.

V.D. Queueing and Storage Recommendations

As with the initial total traffic condition, 95th percentile queue lengths for traffic movements at study intersections were evaluated with the inclusion of a potential 2,500-student high school in PA-13. This evaluation was then used to develop recommendations for storage lanes. **Table 6** displays 95th percentile queue results, as well as existing and recommended storage lane lengths.

KEY MAP





LEGEND

X/X	=	AM/PM Peak Hour Signalized Intersection Level of Service	STOP	= Stop Sign
x/x	=	AM/PM Peak Hour Unsignalized Intersection Level of Service		= Traffic Signal
				= Recommended Improvements

NORTH

FELSBURG HOLT & ULLEVIG

FIGURE 10
Long-Term Total Traffic Operations with High School

Table 6. Total Traffic Queues and Storage Recommendations with High School

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	Total Traffic Storage Length (feet)	Recommended Storage Length (feet)
1	Castle Pines Parkway & Lagae Road	EBLT	34 (38)	200	*No Change*
		EBT	#832 (#622)	Continuous	*No Change*
		EBRT	52 (101)	240	*No Change*
		WBLT	225 (m261)	275	*No Change*
		WBT	241 (m#815)	Continuous	*No Change*
		WBRT	m1 (m0)	100	*No Change*
		NBLT	122 (#381)	400	*No Change*
		NBT	54 (45)	Continuous	*No Change*
		NBRT	166 (450)	Continuous	*No Change*
		SBLT	52 (123)	125	*No Change*
		SBT	33 (71)	Continuous	*No Change*
		SBRT	0 (0)	50	*No Change*
2	Castle Pines Parkway & Village Square Drive	EBLT	m1 (m11)	260	*No Change*
		EBT	#970 (m665)	Continuous	*No Change*
		EBRT	m0 (m4)	200	*No Change*
		WBLT	m203 (#580)	Continuous	*No Change*
		WBT/WBRT	174 (#1116)	Continuous	*No Change*
		NBLT/NBT	78 (165)	175	*No Change*
		NBRT	110 (189)	Continuous	*No Change*
		SBLT/SBT/SBRT	44 (82)	Continuous	*No Change*
3	Castle Pines Parkway & Debbie Lane	EBLT	m5 (m5)	130	*No Change*
		EBT/EBRT	m244 (#638)	Continuous	*No Change*
		WBLT	m293 (m327)	390	*No Change*
		WBT/WBRT	158 (428)	Continuous	*No Change*
		NBLT	113 (132)	150	*No Change*
		NBT	15 (34)	Continuous	*No Change*
		NBRT	202 (194)	225	*No Change*
		SBLT	#214 (221)	Continuous	*No Change*
		SBT	44 (32)	Continuous	*No Change*
		SBRT	0 (0)	75	*No Change*
4	Castle Pines Parkway & I-25 SB Ramps	EBT	m261 (#393)	Continuous	*No Change*
		EBRT	m124 (m233)	Continuous	*No Change*
		WBLT	#223 (m131)	515	*No Change*
		WBT	401 (662)	Continuous	*No Change*

Table 6. Total Traffic Queues and Storage Recommendations with High School

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	Total Traffic Storage Length (feet)	Recommended Storage Length (feet)
4	Castle Pines Parkway & I-25 SB Ramps	SBLT	#493 (#535)	525	550
		SBLT/SBT	#570 (#606)	Continuous	*No Change*
		SBRT	0 (0)	350	*No Change*
5	Castle Pines Parkway & I-25 NB Ramps	EBT	m209 (m387)	Continuous	*No Change*
		EBRT	m6 (m13)	N/A	*No Change*
		WBT/WBRT	73 (52)	Continuous	*No Change*
		NBLT	225 (362)	Continuous (L) / 715 (R)	*No Change*
		NBRT	125 (123)	630 (L) / 550 (R)	*No Change*
6	Castle Pines Parkway/ Hess Road & Havana Street	EBLT	#180 (m72)	340	*No Change*
		EBT	109 (94)	Continuous	*No Change*
		WBT	61 (m263)	Continuous	*No Change*
		WBRT	m0 (m13)	Continuous	*No Change*
		SBLT	237 (239)	Continuous	*No Change*
		SBRT	135 (45)	450	*No Change*
7	Happy Canyon Road & I-25 SB Ramps	EBT	321 (#428)	Continuous	*No Change*
		EBRT	71 (104)	250	*No Change*
		WBLT	m285 (m#329)	175 (L) / Continuous (R)*	*No Change**
		WBT	m44 (m286)	Continuous	*No Change*
		SBLT	307 (433)	400	450
		SBLT/SBT	313 (440)	Continuous	*No Change*
		SBRT	336 (440)	450	*No Change*
8	Happy Canyon Road & I-25 NB Ramps	EBLT	#355 (m297)	200 (L) / Continuous (R)*	*No Change**
		EBT	98 (m146)	Continuous	*No Change*
		WBT	m49 (m283)	Continuous	*No Change*
		WBRT	m273 (m304)	300	325
		NBLT	#322 (#374)	375	*No Change*
		NBLT/NBT	#311 (#398)	Continuous	*No Change*
		NBRT	0 (0)	250	*No Change*
9	Hess Road & Canyonside Boulevard	EBLT	m167 (m72)	175	*No Change*
		EBT	231 (#476)	Continuous	*No Change*
		EBRT	55 (402)	Continuous	425
		WBLT	#419 (#596)	575	600

Table 6. Total Traffic Queues and Storage Recommendations with High School

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	Total Traffic Storage Length (feet)	Recommended Storage Length (feet)
9	Hess Road & Canyonside Boulevard	WBT	330 (203)	Continuous	*No Change*
		WBT/WBRT	330 (203)	100	*No Change*
		NBLT	#539 (m#512)	500 (L, C) / Continuous (R)	550 (L, C) / Continuous (R)
		NBT	m69 (m167)	Continuous	*No Change*
		NBRT	m99 (m100)	175	*No Change*
		SBLT	101 (140)	175	*No Change*
		SBT	58 (134)	Continuous	*No Change*
		SBRT	34 (85)	150	*No Change*
10	Canyonside Boulevard & Canyon Forge Drive/ PA-2 East Access	EBLT	92 (#334)	350 (L) / Continuous (R)	*No Change*
		EBT	23 (47)	Continuous	*No Change*
		EBRT	0 (84)	100	*No Change*
		WBLT	79 (#156)	175	*No Change*
		WBT	26 (68)	Continuous	*No Change*
		WBRT	365 (265)	375	*No Change*
		NBLT	m19 (m#167)	200	*No Change*
		NBT	#614 (287)	Continuous	*No Change*
		NBT/NBRT	#614 (287)	100	625
		SBLT	m154 (m293)	325	*No Change*
		SBT	m201 (m314)	Continuous	*No Change*
		SBRT	m0 (m3)	75	*No Change*
11	Hess Road & Cross Canyon Trail	EBRT	0 (0)	Continuous	*No Change*
		NBRT	105 (63)	Continuous	*No Change*
12	Happy Canyon Road & Canyonside Boulevard	EBLT	#504 (#364)	Continuous	*No Change*
		EBT	m22 (51)	Continuous	*No Change*
		EBRT	29 (698)	400	700
		WBLT/WBT	59 (49)	75	*No Change*
		WBRT	0 (0)	Continuous	*No Change*
		NBLT	#765 (#410)	500	775
		NBT/NBRT	390 (236)	Continuous	*No Change*
		SBLT	18 (24)	50	*No Change*
		SBT	#485 (#793)	Continuous	*No Change*
		SBRT	75 (117)	225	*No Change*

Table 6. Total Traffic Queues and Storage Recommendations with High School

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	Total Traffic Storage Length (feet)	Recommended Storage Length (feet)
13	Hess Road & PA-2 North Access	EBRT	0 (0)	50	*No Change*
		WBLT	50 (35)	50	*No Change*
		NBRT	15 (90)	Continuous	*No Change*
14	Canyonside Boulevard & PA-2/3 South Access	EBLT/EBT	224 (255)	275	*No Change*
		EBT	6 (9)	Continuous	*No Change*
		EBRT	15 (66)	75	*No Change*
		WBLT/WBT	52 (84)	100	*No Change*
		WBT	7 (19)	Continuous	*No Change*
		WBRT	23 (25)	50	*No Change*
		NBLT	42 (177)	200	*No Change*
		NBT/NBRT	#723 (498)	Continuous	*No Change*
		SBLT	108 (m30)	100	125
		SBT	109 (#975)	Continuous	*No Change*
		SBRT	1 (m31)	50	*No Change*
15	Hess Road & PA-3 North Access	EBRT	0 (0)	50	*No Change*
		WBLT	10 (8)	50	*No Change*
		NBRT	5 (8)	Continuous	*No Change*
16	Crowfoot Valley Road & Sapphire Pointe Boulevard	EBLT	40 (136)	150	*No Change*
		EBT	226 (349)	Continuous	*No Change*
		WBT/WBRT	#548 (#738)	Continuous	*No Change*
		SBLT	37 (24)	250	*No Change*
		SBRT	55 (35)	Continuous	*No Change*
17	Crowfoot Valley Road & Canyonside Boulevard	EBLT	#464 (#399)	350	475
		EBT	241 (472)	Continuous	*No Change*
		WBT	575 (#717)	Continuous	*No Change*
		WBRT	255 (231)	225	250
		SBLT	#446 (#694)	Continuous	*No Change*
		SBRT	52 (132)	Continuous	*No Change*
18	Canyonside Boulevard & PA-13 Access	WBLT	205 (93)	75	225
		WBRT	612 (264)	Continuous	*No Change*
		NBT	m#638 (m447)	Continuous	*No Change*
		NBRT	m99 (m37)	50	100
		SBLT	286 (210)	100	300
		SBT	120 (225)	Continuous	*No Change*

Table 6. Total Traffic Queues and Storage Recommendations with High School

Intersection		Movement	95th Percentile Queue (feet) AM (PM)	Total Traffic Storage Length (feet)	Recommended Storage Length (feet)
19	Canyonside Boulevard & PA-14/15 South Access	EBLT/EBT/EBRT	73 (118)	Continuous	*No Change*
		WBLT/WBT/ WBRT	65 (85)	Continuous	*No Change*
		NBLT	0 (0)	50	*No Change*
		NBT/NBRT	0 (0)	Continuous	*No Change*
		SBLT	3 (13)	50	*No Change*
		SBT/SBRT	0 (0)	Continuous	*No Change*

Notes: Movements are identified first by direction then by movement (i.e., EBLT: Eastbound left-turn)
EB: Eastbound; **WB:** Westbound; **NB:** Northbound; **SB:** Southbound
LT: Left-turn; **T:** Through; **RT:** Right-turn
#: 95th percentile volume exceeds capacity
m: Volume for 95th percentile queue is metered by an upstream signal
***:** Interchange requires further study

V.E. Progression and Bandwidth

Using methods identified in the North Canyons TIS, a progression evaluation was performed for the total traffic condition to optimize bandwidth along Castle Pines Parkway/Hess Road. Because this facility attracts/disperses users to/from I-25, the progression evaluation was separated into two corridors: west of I-25 and east of I-25. Additionally, both westbound through traffic and northbound left-turn traffic movements were prioritized at the Hess Road & Canyonside Boulevard intersection with respect to progression. **Table 7** displays progression and bandwidth results for signals on Castle Pines Parkway/Hess Road.

Table 7. Total Traffic Progression and Bandwidth with High School

Peak Hour	Cycle Length	Castle Pine Parkway West of I-25		Hess Road East of I-25	
		EB	WB	EB	WB
AM	120 s	35 s (29.2%)	18 s (15.0%)	38 s (31.7%)	WBT: 36 s (30.0%) NBLT: 40 s (33.3%)
PM	120 s	27 s (22.5%)	47 s (39.2%)	38 s (31.7%)	WBT: 27 s (22.5%) NBLT: 41 s (34.2%)

Notes: **WBT:** Westbound Through Movement
NBLT: Northbound Left-turn Movement

Like the initial total traffic evaluation, progression favors one direction in each peak hour: toward I-25 in the AM peak hour and away from I-25 in the PM peak hour. Peak hour bandwidth remains unchanged in both directions except for eastbound traffic on Hess Road east of I-25, which decreases by two seconds in the AM peak hour compared to the initial total traffic evaluation. This change is caused by slight alterations to signal timing at the Hess Road & Canyonside Boulevard intersection.

VI. SUMMARY AND CONCLUSIONS

The proposed Canyons 2nd PD Amendment Development is planned to include 1,500 new residential DUs, 90 KSF of previously approved commercial development, and possibly a 2,500-student high school in planning areas along Canyonside Boulevard between Happy Canyon Road and Crowfoot Valley Road in the City of Castle Pines, Colorado. This report evaluates the proposed development against committed transportation improvements in the approved PD (2009) and the 1st PD Amendment.

All traffic forecasts and roadway improvements that were identified in the *North Canyons TIS* were assumed in this report as part of the background traffic conditions. This report documents forecasted traffic volumes and associated operations related to the addition of the 2nd PD Amendment development and the connection of Canyonside Boulevard to Crowfoot Valley Road.

Overall traffic operations will be acceptable with the additional commercial and residential development proposed in the 2nd PD Amendment with some recommended roadway improvements. The proposed 2nd PD Amendment development will generate 16,230 daily external vehicle-trips, with approximately 1,140 external vehicle-trips in the AM peak hour and 1,200 external vehicle-trips in the PM peak hour. As a result of the development and the connection of Canyonside Boulevard to Crowfoot Valley Road, Canyonside Boulevard south of Shea Canyons will serve approximately 21,400 vpd. With some improvements, all signalized intersections in the study area will operate at LOS D or better during peak hours.

Table 8 displays recommended improvements to accommodate increased background traffic and site-generated traffic beyond those noted in Appendix G of the Canyons PD. Of note, the Phase 2 improvements documented in the Happy Canyon IAR, to be implemented by others, should be reevaluated considering additional development. The Canyons will contribute up to 3% to the improvements at this interchange based on the 2nd PD Amendment. Access intersections that were not analyzed in this study should be evaluated during site plan approval.

There is potential for a 2,500-student high school to be built in PA-13 of the 2nd PD Amendment development and generate nearly 5,100 additional vehicle-trips per day: about 2,440 trips during the AM peak hour and 1,550 trips during the PM peak hour. This school would likely have different trip distribution characteristics than other portions of the development. However, little is known at this time about the service area boundaries of the school, so the external trip distribution was assumed to be the same as residential and commercial parcels in the 2nd PD Amendment development. As a result, roadway improvements determined in this study to be needed to serve high school traffic may not necessarily be appropriate. Further analysis is recommended pending new information from the school district when this high school is proposed.

Table 8. Summary of Recommended Improvements

	Improvement Description	Improvement Timeframe			Responsibility
		Long-Term Background	Long-Term Total	Long-Term Total with High School	
1	Construct a third westbound through lane along Hess Road at the Castle Pines Parkway/Hess Road & Havana Street intersection (#6). This should be a continuous lane from Canyonside Boulevard (intersection #9) to the I-25 northbound ramps (intersection #5) Provide a dedicated westbound right-turn deceleration lane.	✓			City of Castle Pines (Douglas County)
2	When warranted, signalize the intersection of Crowfoot Valley Road & Sapphire Pointe Boulevard (#16). Provide a dedicated eastbound left-turn lane and protected/permitted phasing.	✓			Douglas County/ Town of Castle Rock
3	When warranted, signalize the intersection of Crowfoot Valley Road & Canyonside Boulevard (#17). Provide a dedicated eastbound left-turn lane and protected/permitted phasing. Construct a westbound right turn lane.	✓			North Canyons
4	Widen Happy Canyon Road to a four-lane cross-section between Canyonside Boulevard and I-25.	✓			North Canyons
5	Contribute a proportional share (up to 3%) of further improvement costs at the I-25/Happy Canyon Road interchange based on additional trips associated with the 2nd PD Amendment development. In addition to the Phase 2 improvements identified in the *North Canyons TIS* and *Happy Canyon IAR*, provide the following improvements for the Happy Canyon Road & I-25 interchange intersections (#7 and #8): • Construct a second southbound left-turn lane from the I-25 southbound off-ramp (#7) • Provide a channelized westbound right-turn lane at the I-25 northbound on-ramp (#8) Alternatively, revise improvements during Phase 2 improvements to consider other interchange types and treatments.		✓		City of Castle Pines/ Douglas County/ North Canyons/other area developments

Table 8. Summary of Recommended Improvements

Improvement Description		Improvement Timeframe			Responsibility
		Long-Term Background	Long-Term Total	Long-Term Total with High School	
6	Construct a continuous acceleration lane on southbound Canyonside Boulevard between Hess Road (intersection #9) and Canyon Forge Drive (#10). This lane should terminate as the southbound right-turn lane at Canyon Forge Drive.		✓		North Canyons
7	Construct a dedicated northbound right-turn storage lane on Canyonside Boulevard at Canyon Forge Drive (intersection #10).		✓		North Canyons
8	Create a dedicated eastbound right-turn lane at the Happy Canyon Road & Canyonside Boulevard intersection (#12). Additionally, construct a southbound acceleration lane to allow for free right-turn movements.		✓		North Canyons
9	Construct the east leg of the Canyonside Boulevard & PA-13 Access intersection (#18) with separate left-turn and right-turn lanes. When warranted, signalize the intersection, providing a single southbound left-turn lane with protected/permitted phasing and a dedicated northbound right-turn lane.		✓		North Canyons
10	Construct the minor street approaches to the PA-14/PA-15 South Access intersection (#19), providing single approach lanes and two-way stop control.		✓		North Canyons
Potential Improvements Related to High School*					
H1	Modify the PA-13 Access intersection (#18) to provide dual southbound left-turn lanes with protected phasing and overlap phasing for westbound right-turns.			✓	Douglas Country School District
H2	Construct a second southbound lane on the PA-1 approach to the Hess Road & Canyonside Boulevard intersection (#9).			✓	North Canyons

Table 8. Summary of Recommended Improvements

Improvement Description		Improvement Timeframe			Responsibility
		Long-Term Background	Long-Term Total	Long-Term Total with High School	
H3	Convert the northbound right-turn lane at Canyonside Boulevard & Canyon Forge Drive (intersection #10) to a shared through/right-turn lane.			✓	North Canyons

** - These improvements to be re-evaluated once high school catchment area is defined.*

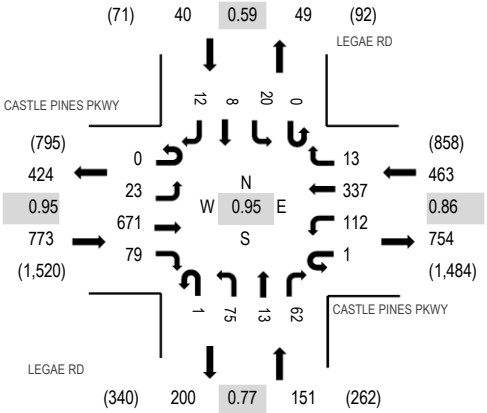
APPENDIX A. TRAFFIC COUNTS

- Turning Movement Counts A-1
- 24-Hour Counts A-19

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

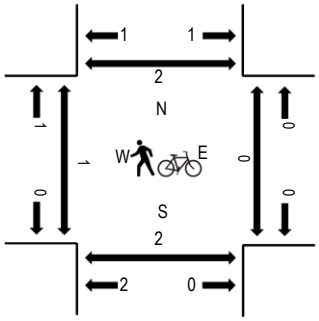
Location: 6 LEGAE RD & CASTLE PINES PKWY AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



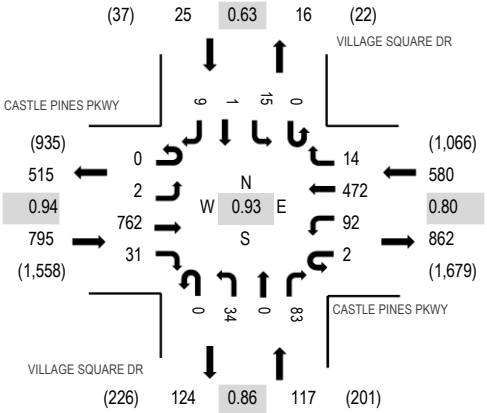
Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				LEGAE RD Northbound				LEGAE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	6	153	12	0	19	73	1	0	16	5	10	0	5	0	0	300	1,284	0	0	0	0
7:15 AM	0	3	152	16	2	20	77	1	0	11	0	8	0	4	1	2	297	1,315	0	0	0	0
7:30 AM	0	2	186	14	1	17	75	3	0	17	1	7	0	5	1	1	330	1,372	1	0	1	0
7:45 AM	0	11	176	16	0	22	83	1	0	11	9	16	0	5	2	5	357	1,407	0	0	1	1
8:00 AM	0	6	155	19	1	29	84	2	0	14	3	11	0	5	1	1	331	1,427	0	0	1	0
8:15 AM	0	4	185	21	0	21	72	2	0	19	0	11	0	10	4	5	354		0	0	0	1
8:30 AM	0	5	175	18	0	28	86	4	0	22	3	19	0	1	1	3	365		0	0	0	1
8:45 AM	0	8	156	21	0	34	95	5	1	20	7	21	0	4	2	3	377		1	0	1	0
Count Total	0	45	1,338	137	4	190	645	19	1	130	28	103	0	39	12	20	2,711		2	0	4	3
Peak Hour	0	23	671	79	1	112	337	13	1	75	13	62	0	20	8	12	1,427		1	0	2	2

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

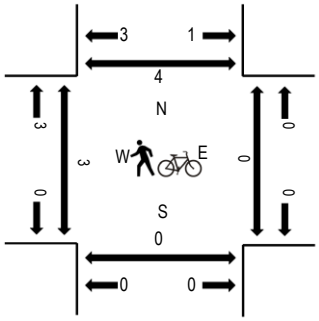
Location: 5 VILLAGE SQUARE DR & CASTLE PINES PKWY AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



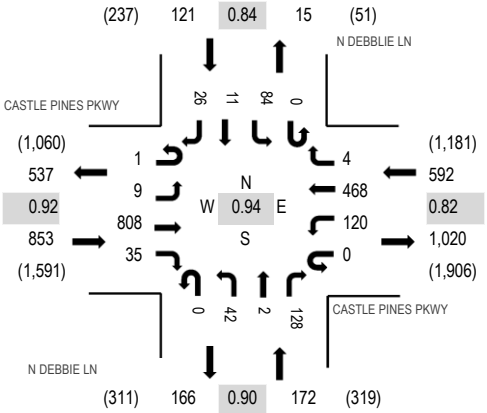
Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				VILLAGE SQUARE DR Northbound				VILLAGE SQUARE DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	1	153	7	0	11	93	0	0	4	0	14	0	1	0	2	286	1,345	0	0	0	0
7:15 AM	0	1	176	5	1	16	107	0	0	3	0	20	0	0	0	0	329	1,424	0	0	0	0
7:30 AM	0	0	191	8	0	21	94	2	0	4	0	21	0	5	0	0	346	1,481	0	0	0	0
7:45 AM	0	1	214	6	1	28	111	1	0	0	0	18	0	2	0	2	384	1,492	0	0	2	0
8:00 AM	0	0	176	10	1	28	119	4	0	5	0	18	0	1	0	3	365	1,517	0	0	0	0
8:15 AM	0	1	211	9	0	26	95	3	0	10	0	21	0	7	0	3	386		1	0	0	0
8:30 AM	0	1	193	6	1	13	105	4	0	8	0	21	0	2	1	2	357		2	0	0	1
8:45 AM	0	0	182	6	0	25	153	3	0	11	0	23	0	5	0	1	409		0	0	0	3
Count Total	0	5	1,496	57	4	168	877	17	0	45	0	156	0	23	1	13	2,862		3	0	2	4
Peak Hour	0	2	762	31	2	92	472	14	0	34	0	83	0	15	1	9	1,517		3	0	0	4

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

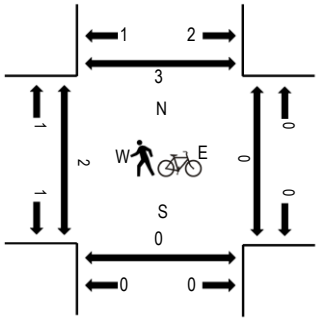
Location: 4 N DEBBIE LN & CASTLE PINES PKWY AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				N DEBBIE LN Northbound				N DEBBLIE LN Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	2	154	6	2	32	92	10	0	6	1	23	0	17	0	7	352	1,592	0	0	0	0
7:15 AM	0	2	178	3	0	23	110	2	0	7	1	26	0	14	0	11	377	1,661	0	0	0	0
7:30 AM	0	4	190	4	2	31	97	2	0	4	0	31	0	28	0	9	402	1,719	0	0	0	0
7:45 AM	0	2	207	15	0	38	125	2	0	7	0	29	0	21	4	11	461	1,738	0	0	0	0
8:00 AM	0	1	187	3	0	30	131	1	0	12	0	29	0	19	2	6	421	1,736	1	0	0	1
8:15 AM	1	3	219	8	0	23	110	1	0	12	2	37	0	15	2	2	435		1	0	0	0
8:30 AM	0	3	195	9	0	29	102	0	0	11	0	33	0	29	3	7	421		0	0	0	2
8:45 AM	0	8	176	11	0	34	151	1	0	16	3	29	0	16	1	13	459		1	0	0	1
Count Total	1	25	1,506	59	4	240	918	19	0	75	7	237	0	159	12	66	3,328		3	0	0	4
Peak Hour	1	9	808	35	0	120	468	4	0	42	2	128	0	84	11	26	1,738		2	0	0	3

All Traffic Data Services Inc.
(303) 216-2439
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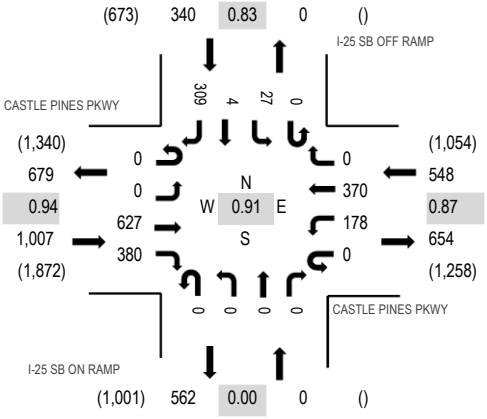
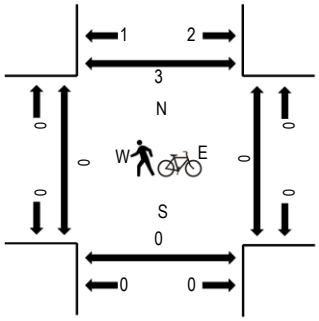
Location: 1 I-25 SB ON RAMP & CASTLE PINES PKWY AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				I-25 SB ON RAMP Northbound				I-25 SB OFF RAMP Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	129	51	0	32	72	0	0	0	0	0	0	4	1	74	363	1,764	0	0	0	0
7:15 AM	0	0	145	75	0	50	76	0	0	0	0	0	0	7	0	81	434	1,847	0	0	0	0
7:30 AM	0	0	159	81	0	42	79	0	0	0	0	0	0	8	0	76	445	1,876	0	0	0	0
7:45 AM	0	0	168	88	0	54	104	0	0	0	0	0	0	10	0	98	522	1,895	0	0	0	0
8:00 AM	0	0	131	96	0	46	99	0	0	0	0	0	0	7	1	66	446	1,835	0	0	0	1
8:15 AM	0	0	174	93	0	39	85	0	0	0	0	0	0	5	3	64	463		0	0	0	0
8:30 AM	0	0	154	103	0	39	82	0	0	0	0	0	0	5	0	81	464		0	0	0	2
8:45 AM	0	0	147	78	0	29	126	0	0	0	0	0	0	5	0	77	462		0	0	0	0
Count Total	0	0	1,207	665	0	331	723	0	0	0	0	0	0	51	5	617	3,599		0	0	0	3
Peak Hour	0	0	627	380	0	178	370	0	0	0	0	0	0	27	4	309	1,895		0	0	0	3

All Traffic Data Services Inc.
(303) 216-2439
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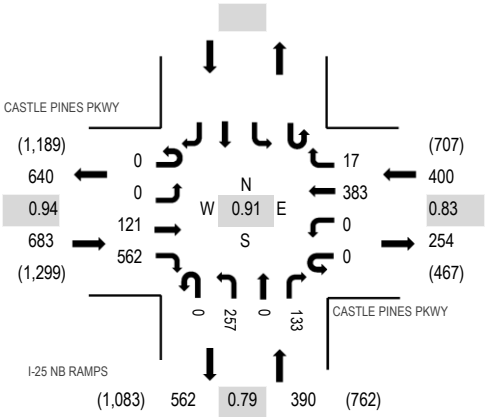
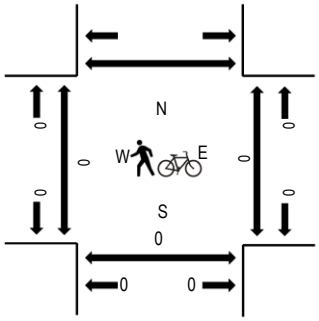
Location: 2 I-25 NB RAMPS & CASTLE PINES PKWY AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				I-25 NB RAMPS Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	23	117	0	0	68	3	0	50	0	23					284	1,388	0	0	0	
7:15 AM	0	0	22	143	0	0	80	5	0	55	0	28					333	1,446	0	0	0	
7:30 AM	0	0	33	148	0	0	86	5	0	59	0	37					368	1,473	0	0	0	
7:45 AM	0	0	33	138	0	0	113	7	0	70	0	42					403	1,423	0	0	0	
8:00 AM	0	0	28	121	0	0	99	3	0	70	0	21					342	1,380	0	0	0	
8:15 AM	0	0	27	155	0	0	85	2	0	58	0	33					360		0	0	0	
8:30 AM	0	0	19	135	0	0	72	2	0	56	0	34					318		0	0	0	
8:45 AM	0	0	31	126	0	0	75	2	0	93	0	33					360		0	0	0	
Count Total	0	0	216	1,083	0	0	678	29	0	511	0	251					2,768		0	0	0	
Peak Hour	0	0	121	562	0	0	383	17	0	257	0	133					1,473		0	0	0	

All Traffic Data Services Inc.
(303) 216-2439
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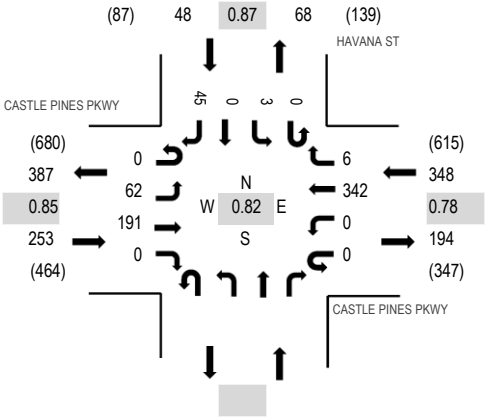
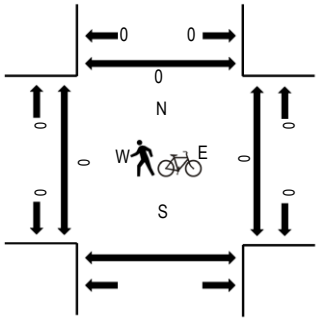
Location: 3 HAVANA ST & CASTLE PINES PKWY AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



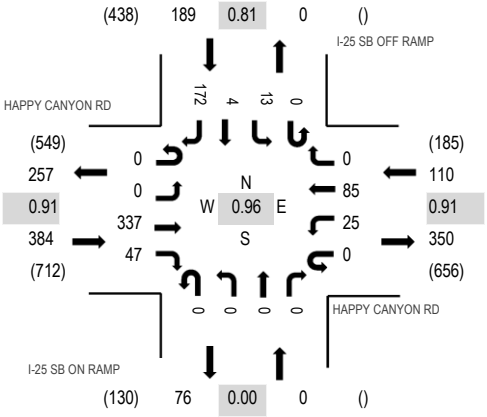
Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				Northbound				HAVANA ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	19	27	0	0	0	55	1					0	2	0	7	111	594	0	0		0
7:15 AM	0	19	30	0	0	0	74	6					0	0	0	4	133	634	0	0		0
7:30 AM	0	17	53	0	0	0	70	1					0	1	0	9	151	649	0	0		0
7:45 AM	0	22	52	0	0	0	109	4					0	1	0	11	199	624	0	0		0
8:00 AM	0	9	40	0	0	0	86	1					0	1	0	14	151	572	0	0		0
8:15 AM	0	14	46	0	0	0	77	0					0	0	0	11	148		0	0		0
8:30 AM	0	7	46	0	0	0	60	2					0	1	0	10	126		0	0		0
8:45 AM	0	16	47	0	0	0	68	1					0	0	0	15	147		0	0		0
Count Total	0	123	341	0	0	0	599	16					0	6	0	81	1,166		0	0		0
Peak Hour	0	62	191	0	0	0	342	6					0	3	0	45	649		0	0		0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

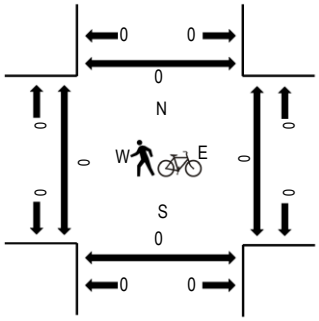
Location: 2 I-25 SB ON RAMP & HAPPY CANYON RD AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	HAPPY CANYON RD Eastbound				HAPPY CANYON RD Westbound				I-25 SB ON RAMP Northbound				I-25 SB OFF RAMP Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	88	7	0	5	13	0	0	0	0	0	0	3	0	54	170	680	0	0	0	0
7:15 AM	0	0	78	5	0	2	13	0	0	0	0	0	0	2	0	77	177	677	0	0	0	0
7:30 AM	0	0	73	8	0	4	12	0	0	0	0	0	0	4	0	64	165	670	0	0	0	0
7:45 AM	0	0	82	10	0	4	19	0	0	0	0	0	0	6	0	47	168	683	0	0	0	0
8:00 AM	0	0	82	4	0	5	26	0	0	0	0	0	0	2	1	47	167	655	0	0	0	0
8:15 AM	0	0	93	12	0	9	22	0	0	0	0	0	0	1	2	31	170		0	0	0	0
8:30 AM	0	0	80	21	0	7	18	0	0	0	0	0	0	4	1	47	178		0	0	0	0
8:45 AM	0	0	55	14	0	8	18	0	0	0	0	0	0	3	1	41	140		0	0	0	0
Count Total	0	0	631	81	0	44	141	0	0	0	0	0	0	25	5	408	1,335		0	0	0	0
Peak Hour	0	0	337	47	0	25	85	0	0	0	0	0	0	13	4	172	683		0	0	0	0

All Traffic Data Services Inc.
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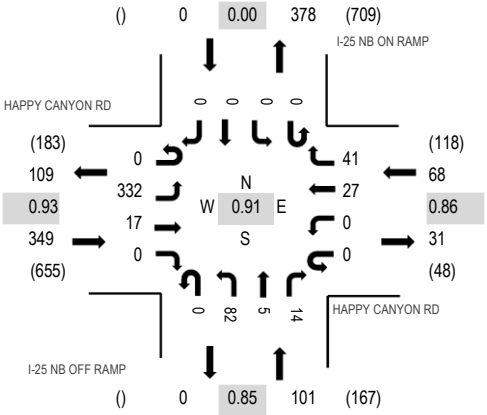
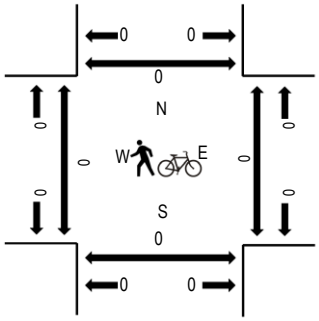
Location: 3 I-25 NB OFF RAMP & HAPPY CANYON RD AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	HAPPY CANYON RD Eastbound				HAPPY CANYON RD Westbound				I-25 NB OFF RAMP Northbound				I-25 NB ON RAMP Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	89	1	0	0	0	4	8	0	11	0	1	0	0	0	0	114	445	0	0	0	0
7:15 AM	0	79	1	0	0	0	4	8	0	11	3	1	0	0	0	0	107	462	0	0	0	0
7:30 AM	0	74	3	0	0	0	3	8	0	13	0	0	0	0	0	0	101	497	0	0	0	0
7:45 AM	0	78	9	0	0	0	6	8	0	17	1	4	0	0	0	0	123	518	0	0	0	0
8:00 AM	0	83	1	0	0	0	5	11	0	27	1	3	0	0	0	0	131	495	0	0	0	0
8:15 AM	0	92	2	0	0	0	7	11	0	23	2	5	0	0	0	0	142		0	0	0	0
8:30 AM	0	79	5	0	0	0	9	11	0	15	1	2	0	0	0	0	122		0	0	0	0
8:45 AM	0	54	5	0	0	0	10	5	0	18	3	5	0	0	0	0	100		0	0	0	0
Count Total	0	628	27	0	0	0	48	70	0	135	11	21	0	0	0	0	940		0	0	0	0
Peak Hour	0	332	17	0	0	0	27	41	0	82	5	14	0	0	0	0	518		0	0	0	0

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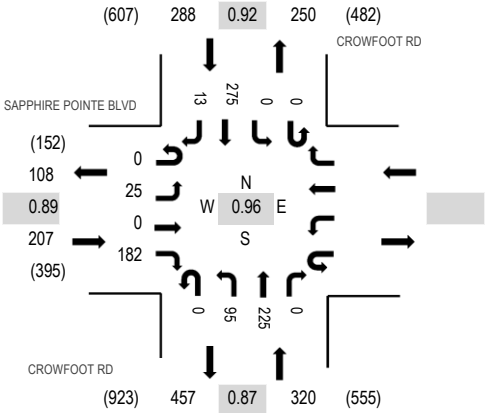
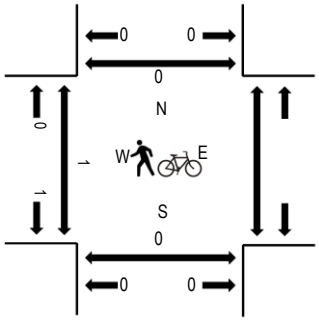
Location: 1 CROWFOOT RD & SAPPHIRE POINTE BLVD AM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	SAPPHIRE POINTE BLVD Eastbound				Westbound				CROWFOOT RD Northbound				CROWFOOT RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	0	37					0	4	44	0	0	0	64	1	155	742	0		0	0
7:15 AM	0	6	0	42					0	6	41	0	0	0	75	3	173	793	0		0	0
7:30 AM	0	8	0	41					0	5	63	0	0	0	83	6	206	812	0		0	0
7:45 AM	0	8	0	41					0	15	57	0	0	0	83	4	208	811	0		0	0
8:00 AM	0	7	0	55					0	16	55	0	0	0	73	0	206	815	0		0	0
8:15 AM	0	7	0	47					0	19	59	0	0	0	57	3	192		1		0	0
8:30 AM	0	5	0	50					0	32	47	0	0	0	66	5	205		0		0	0
8:45 AM	0	6	0	30					0	28	64	0	0	0	79	5	212		0		0	0
Count Total	0	52	0	343					0	125	430	0	0	0	580	27	1,557		1		0	0
Peak Hour	0	25	0	182					0	95	225	0	0	0	275	13	815		1		0	0

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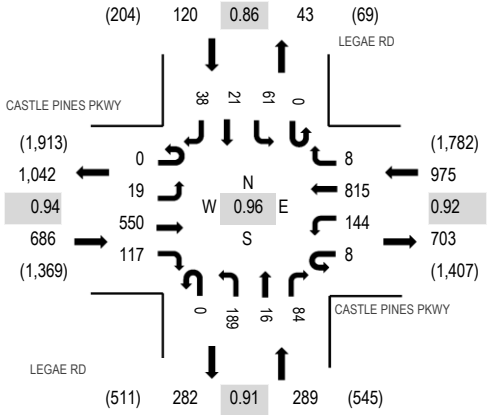
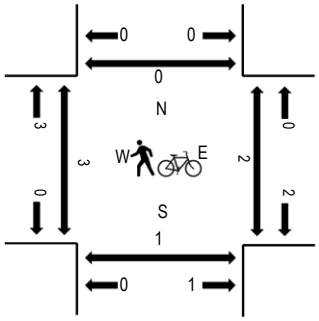
Location: 6 LEGAE RD & CASTLE PINES PKWY PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				LEGAE RD Northbound				LEGAE RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	1	138	24	3	33	149	2	1	49	2	13	0	13	4	8	440	1,830	0	4	1	0
4:15 PM	0	2	149	19	2	37	149	2	0	51	1	16	0	11	1	7	447	1,927	0	2	0	0
4:30 PM	0	4	139	22	4	27	184	1	0	46	0	18	0	11	3	7	466	2,011	0	0	0	0
4:45 PM	0	7	157	21	5	33	173	3	0	41	1	17	0	8	4	7	477	2,064	0	3	0	0
5:00 PM	0	5	140	24	2	36	224	3	0	57	4	16	0	16	4	6	537	2,070	2	0	0	0
5:15 PM	0	4	138	31	1	33	206	4	0	48	6	25	0	20	4	11	531		0	0	0	0
5:30 PM	0	8	131	28	4	33	212	1	0	45	1	25	0	16	8	7	519		1	2	0	0
5:45 PM	0	2	141	34	1	42	173	0	0	39	5	18	0	9	5	14	483		0	0	0	0
Count Total	0	33	1,133	203	22	274	1,470	16	1	376	20	148	0	104	33	67	3,900		3	11	1	0
Peak Hour	0	19	550	117	8	144	815	8	0	189	16	84	0	61	21	38	2,070		3	2	0	0

All Traffic Data Services Inc.
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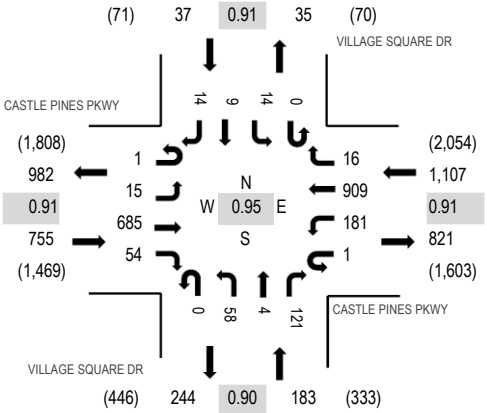
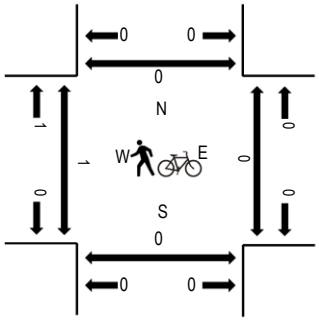
Location: 5 VILLAGE SQUARE DR & CASTLE PINES PKWY PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				VILLAGE SQUARE DR Northbound				VILLAGE SQUARE DR Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	5	168	6	1	45	178	3	0	13	1	23	0	3	3	5	454	1,849	0	0	0	0
4:15 PM	0	2	171	5	1	43	185	5	0	14	1	27	0	4	0	3	461	1,944	0	0	0	1
4:30 PM	0	3	166	11	1	35	184	5	0	11	0	28	0	5	1	3	453	2,027	1	0	1	0
4:45 PM	1	5	167	13	0	38	200	4	0	11	0	31	0	6	2	3	481	2,082	0	0	0	0
5:00 PM	0	2	165	12	0	56	248	6	0	22	2	27	0	2	4	3	549	2,078	0	0	0	0
5:15 PM	0	3	189	16	1	53	221	5	0	12	1	32	0	3	3	5	544		1	0	0	0
5:30 PM	0	5	164	13	0	34	240	1	0	13	1	31	0	3	0	3	508		0	0	0	0
5:45 PM	0	4	160	13	0	39	217	5	0	9	1	22	0	2	1	4	477		0	0	0	0
Count Total	1	29	1,350	89	4	343	1,673	34	0	105	7	221	0	28	14	29	3,927		2	0	1	1
Peak Hour	1	15	685	54	1	181	909	16	0	58	4	121	0	14	9	14	2,082		1	0	0	0

All Traffic Data Services Inc.
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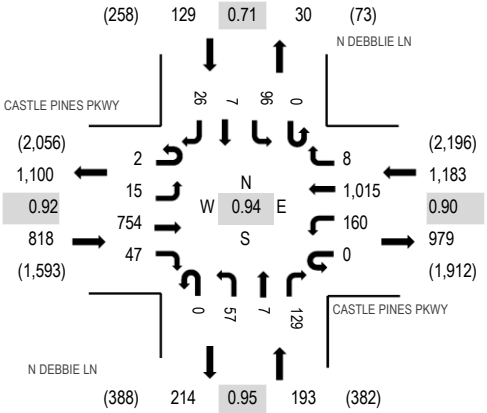
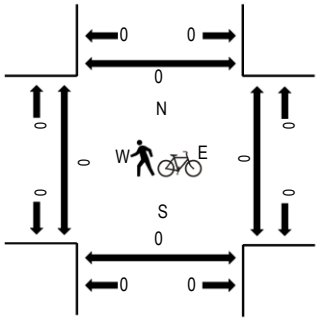
Location: 4 N DEBBIE LN & CASTLE PINES PKWY PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				N DEBBIE LN Northbound				N DEBBLIE LN Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	1	10	172	8	0	27	214	3	0	10	2	27	0	38	4	5	521	2,112	0	0	0	0
4:15 PM	0	6	185	9	0	39	213	1	0	13	4	25	0	19	2	9	525	2,194	1	0	0	0
4:30 PM	0	5	190	5	0	33	202	1	0	17	2	36	0	16	3	8	518	2,285	1	0	0	0
4:45 PM	2	5	189	10	0	42	225	1	0	12	2	31	0	22	2	5	548	2,323	0	0	0	0
5:00 PM	0	5	179	10	0	34	292	5	0	11	4	31	0	22	2	8	603	2,317	0	0	0	0
5:15 PM	0	1	210	12	0	47	254	1	0	15	0	36	0	31	2	7	616		0	0	0	0
5:30 PM	0	4	176	15	0	37	244	1	0	19	1	31	0	21	1	6	556		0	0	0	0
5:45 PM	0	5	171	8	1	34	243	2	0	15	2	36	0	17	2	6	542		0	0	0	0
Count Total	3	41	1,472	77	1	293	1,887	15	0	112	17	253	0	186	18	54	4,429		2	0	0	0
Peak Hour	2	15	754	47	0	160	1,015	8	0	57	7	129	0	96	7	26	2,323		0	0	0	0

All Traffic Data Services Inc.
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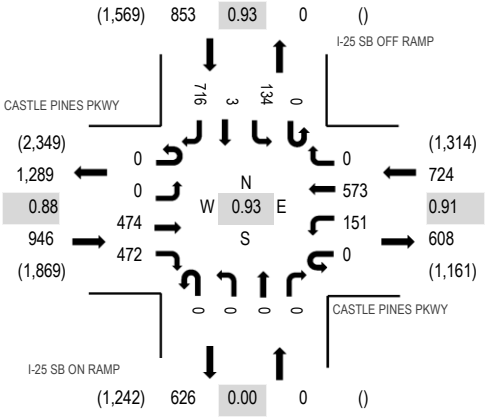
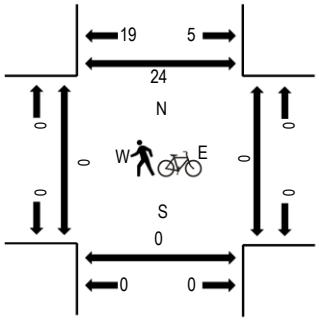
Location: 1 I-25 SB ON RAMP & CASTLE PINES PKWY PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				I-25 SB ON RAMP Northbound				I-25 SB OFF RAMP Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	114	113	0	27	132	0	0	0	0	0	0	14	1	127	528	2,247	0	0	0	12
4:15 PM	0	0	106	116	0	48	111	0	0	0	0	0	0	23	2	150	556	2,352	0	0	0	7
4:30 PM	0	0	116	125	0	35	106	0	0	0	0	0	0	38	2	137	559	2,472	0	1	0	7
4:45 PM	0	0	110	123	0	33	146	0	0	0	0	0	0	40	0	152	604	2,523	0	0	0	5
5:00 PM	0	0	112	108	0	33	143	0	0	0	0	0	0	30	1	206	633	2,505	0	0	0	16
5:15 PM	0	0	137	140	0	45	154	0	0	0	0	0	0	34	1	165	676		0	0	0	3
5:30 PM	0	0	115	101	0	40	130	0	0	0	0	0	0	30	1	193	610		0	0	0	0
5:45 PM	0	0	116	117	0	29	102	0	0	0	0	0	0	26	1	195	586		0	0	0	0
Count Total	0	0	926	943	0	290	1,024	0	0	0	0	0	0	235	9	1,325	4,752		0	1	0	50
Peak Hour	0	0	474	472	0	151	573	0	0	0	0	0	0	134	3	716	2,523		0	0	0	24

All Traffic Data Services Inc.
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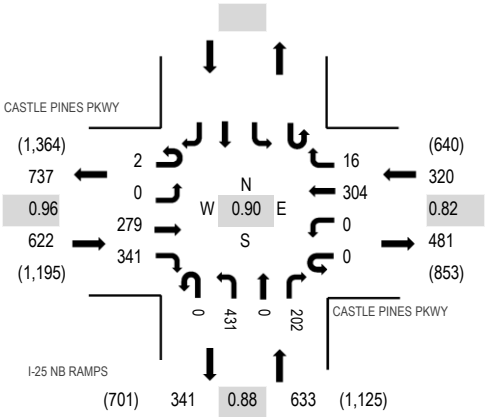
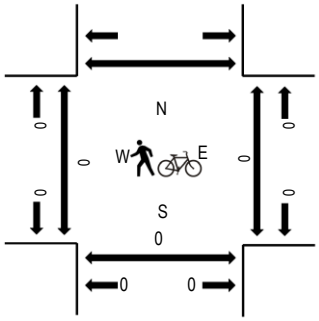
Location: 2 I-25 NB RAMPS & CASTLE PINES PKWY PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				I-25 NB RAMPS Northbound				Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	47	82	0	0	71	9	0	97	0	42					348	1,439	0	0	0	
4:15 PM	0	0	44	90	0	0	92	7	0	78	0	50					361	1,473	0	0	0	
4:30 PM	1	0	64	92	0	0	62	6	0	85	0	43					353	1,549	0	0	0	
4:45 PM	1	0	61	80	0	0	73	3	0	105	0	54					377	1,575	0	0	0	
5:00 PM	1	0	71	89	0	0	73	4	0	105	0	39					382	1,521	0	0	0	
5:15 PM	0	0	81	84	0	0	88	5	0	118	0	61					437		0	0	0	
5:30 PM	0	0	66	88	0	0	70	4	0	103	0	48					379		0	0	0	
5:45 PM	0	0	57	96	0	0	69	4	0	72	0	25					323		0	0	0	
Count Total	3	0	491	701	0	0	598	42	0	763	0	362					2,960		0	0	0	
Peak Hour	2	0	279	341	0	0	304	16	0	431	0	202					1,575		0	0	0	

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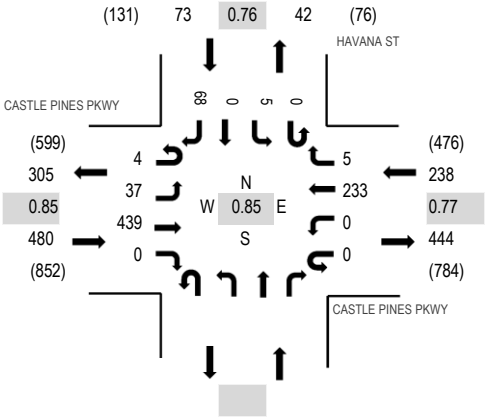
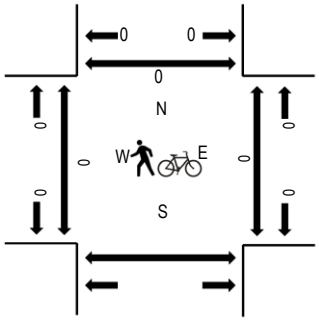
Location: 3 HAVANA ST & CASTLE PINES PKWY PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

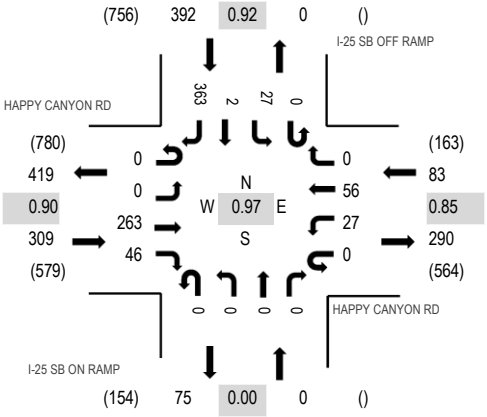
Traffic Counts

Interval Start Time	CASTLE PINES PKWY Eastbound				CASTLE PINES PKWY Westbound				Northbound				HAVANA ST Southbound				Total	Rolling Hour	Pedestrain Crossings		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South North
4:00 PM	1	8	80	0	0	0	55	2					0	0	0	14	160	706	0	0	0
4:15 PM	0	11	83	0	0	0	79	0					0	0	0	14	187	730	0	0	0
4:30 PM	0	8	99	0	0	0	47	0					0	1	0	14	169	775	0	0	0
4:45 PM	1	5	109	0	0	0	57	0					0	1	0	17	190	791	0	0	0
5:00 PM	2	6	102	0	0	0	58	2					0	1	0	13	184	753	0	0	0
5:15 PM	0	15	126	0	0	0	65	2					0	2	0	22	232		0	0	0
5:30 PM	1	11	102	0	0	0	53	1					0	1	0	16	185		0	0	0
5:45 PM	1	4	77	0	0	0	54	1					0	0	0	15	152		0	0	0
Count Total	6	68	778	0	0	0	468	8					0	6	0	125	1,459		0	0	0
Peak Hour	4	37	439	0	0	0	233	5					0	5	0	68	791		0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

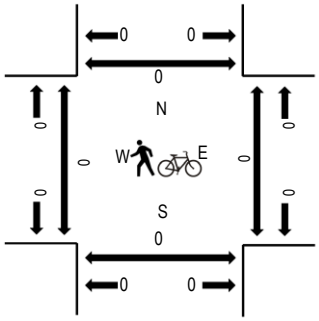
Location: 2 I-25 SB ON RAMP & HAPPY CANYON RD PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



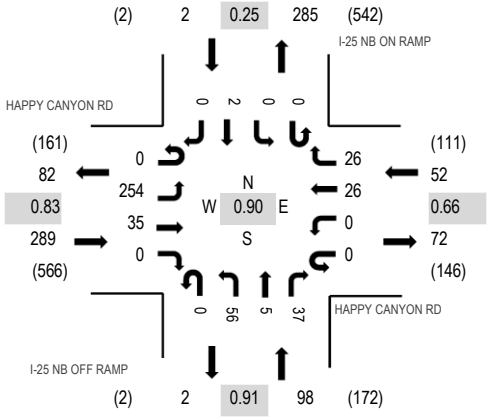
Traffic Counts

Interval Start Time	HAPPY CANYON RD Eastbound				HAPPY CANYON RD Westbound				I-25 SB ON RAMP Northbound				I-25 SB OFF RAMP Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	61	12	0	8	8	0	0	0	0	0	0	16	4	72	181	752	0	0	0	0
4:15 PM	0	0	67	15	0	4	16	0	0	0	0	0	0	9	0	81	192	773	0	0	0	0
4:30 PM	0	0	65	16	0	10	11	0	0	0	0	0	0	10	0	81	193	784	0	0	0	0
4:45 PM	0	0	51	12	0	7	17	0	0	0	0	0	0	2	1	96	186	765	0	0	0	0
5:00 PM	0	0	69	10	0	3	14	0	0	0	0	0	0	6	0	100	202	746	0	0	0	0
5:15 PM	0	0	78	8	0	7	14	0	0	0	0	0	0	9	1	86	203		0	0	0	0
5:30 PM	0	0	47	10	0	13	13	0	0	0	0	0	0	12	0	79	174		0	0	0	0
5:45 PM	0	0	53	5	0	8	10	0	0	0	0	0	0	9	0	82	167		0	0	0	0
Count Total	0	0	491	88	0	60	103	0	0	0	0	0	0	73	6	677	1,498		0	0	0	0
Peak Hour	0	0	263	46	0	27	56	0	0	0	0	0	0	27	2	363	784		0	0	0	0

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

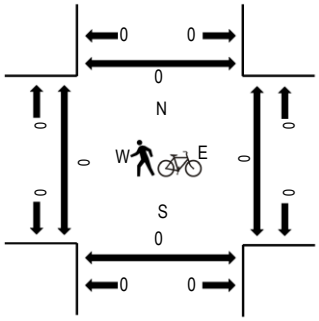
Location: 3 I-25 NB OFF RAMP & HAPPY CANYON RD PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



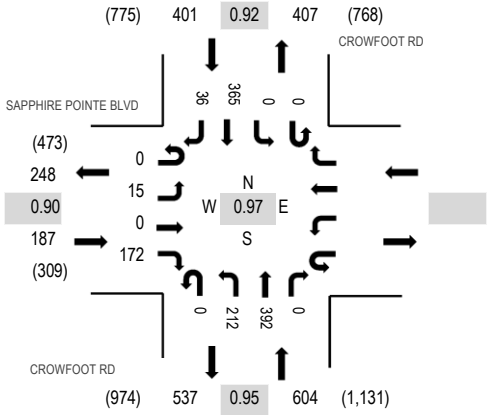
Traffic Counts

Interval Start Time	HAPPY CANYON RD Eastbound				HAPPY CANYON RD Westbound				I-25 NB OFF RAMP Northbound				I-25 NB ON RAMP Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	62	18	0	0	0	5	4	0	9	3	6	0	0	0	0	107	424	0	0	0	0
4:15 PM	0	67	9	0	0	0	5	9	0	15	0	5	0	0	0	0	110	429	0	0	0	0
4:30 PM	0	61	12	0	0	0	9	5	0	12	1	11	0	0	0	0	111	441	0	0	0	0
4:45 PM	0	51	2	0	0	0	8	8	0	17	1	9	0	0	0	0	96	433	0	0	0	0
5:00 PM	0	67	9	0	0	0	1	6	0	14	2	11	0	0	2	0	112	427	0	0	0	0
5:15 PM	0	75	12	0	0	0	8	7	0	13	1	6	0	0	0	0	122		0	0	0	0
5:30 PM	0	50	9	0	0	0	15	8	0	11	0	10	0	0	0	0	103		0	0	0	0
5:45 PM	0	49	13	0	0	0	8	5	0	11	0	4	0	0	0	0	90		0	0	0	0
Count Total	0	482	84	0	0	0	59	52	0	102	8	62	0	0	2	0	851		0	0	0	0
Peak Hour	0	254	35	0	0	0	26	26	0	56	5	37	0	0	2	0	441		0	0	0	0

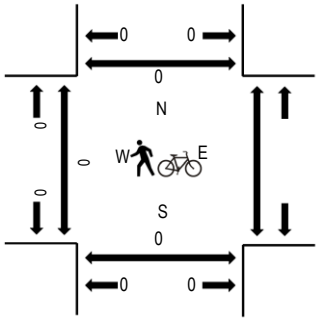
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 1 CROWFOOT RD & SAPPHIRE POINTE BLVD PM
Date and Start Time: Tuesday, June 19, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	SAPPHIRE POINTE BLVD Eastbound				Westbound				CROWFOOT RD Northbound				CROWFOOT RD Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	5	0	30					0	34	63	0	0	0	79	10	221	1,080	0		0	0
4:15 PM	0	5	0	26					0	51	95	0	0	0	79	10	266	1,151	0		0	0
4:30 PM	0	4	0	48					0	51	100	0	0	0	84	11	298	1,192	0		0	0
4:45 PM	0	7	0	37					0	59	101	0	0	0	84	7	295	1,172	0		0	0
5:00 PM	0	3	0	36					0	51	99	0	0	0	95	8	292	1,135	0		0	0
5:15 PM	0	1	0	51					0	51	92	0	0	0	102	10	307		0		0	0
5:30 PM	0	4	0	26					0	48	93	0	0	0	92	15	278		0		0	0
5:45 PM	0	6	0	20					0	53	90	0	0	0	85	4	258		0		0	0
Count Total	0	35	0	274					0	398	733	0	0	0	700	75	2,215		0		0	0
Peak Hour	0	15	0	172					0	212	392	0	0	0	365	36	1,192		0		0	0

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 19-Jun-18
Date End: 19-Jun-18
Site Code: 4
HESS RD E.O. S HAVANA ST

Start Time	19-Jun-18 Tue	EB	WB							Total
12:00 AM		9	12							21
01:00		7	4							11
02:00		8	5							13
03:00		7	4							11
04:00		13	16							29
05:00		43	58							101
06:00		152	189							341
07:00		175	**334**							**509**
08:00		186	300							486
09:00		189	222							411
10:00		**197**	218							415
11:00		191	214							405
12:00 PM		229	206							435
01:00		217	178							395
02:00		228	184							412
03:00		285	238							523
04:00		385	**248**							633
05:00		**416**	233							**649**
06:00		260	186							446
07:00		170	109							279
08:00		138	89							227
09:00		74	75							149
10:00		37	27							64
11:00		29	14							43
Total		3645	3363							7008
Percent		52.0%	48.0%							
AM Peak	-	10:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	197	334	-	-	-	-	-	-	509
PM Peak	-	17:00	16:00	-	-	-	-	-	-	17:00
Vol.	-	416	248	-	-	-	-	-	-	649
Grand Total		3645	3363							7008
Percent		52.0%	48.0%							
ADT		ADT 7,008		AADT 7,008						

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 19-Jun-18
Date End: 19-Jun-18
Site Code: 7
HAPPY CANYON RD E/O I-25 NB RAMPS

Start Time	19-Jun-18 Tue	EB	WB							Total
12:00 AM		2	0							2
01:00		5	0							5
02:00		3	1							4
03:00		1	2							3
04:00		0	3							3
05:00		2	14							16
06:00		18	33							51
07:00		20	57							77
08:00		35	60							95
09:00		52	**65**							**117**
10:00		49	64							113
11:00		**58**	58							116
12:00 PM		60	**62**							122
01:00		54	57							111
02:00		57	50							107
03:00		63	44							107
04:00		59	48							107
05:00		**69**	59							**128**
06:00		64	47							111
07:00		47	34							81
08:00		40	17							57
09:00		30	20							50
10:00		23	9							32
11:00		9	3							12
Total		820	807							1627
Percent		50.4%	49.6%							
AM Peak	-	11:00	09:00	-	-	-	-	-	-	09:00
Vol.	-	58	65	-	-	-	-	-	-	117
PM Peak	-	17:00	12:00	-	-	-	-	-	-	17:00
Vol.	-	69	62	-	-	-	-	-	-	128
Grand Total		820	807							1627
Percent		50.4%	49.6%							
ADT		ADT 1,627		AADT 1,627						

All Traffic Data

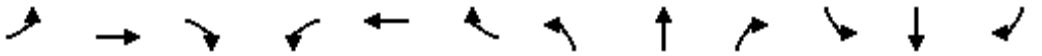
Wheat Ridge, CO 80033

Date Start: 19-Jun-18
Date End: 19-Jun-18
Site Code: 8
CROWFOOT RD N/O SAPPHIRE POINTE BLVD

Start Time	19-Jun-18 Tue	NB	SB							Total
12:00 AM		21	15							36
01:00		9	10							19
02:00		5	6							11
03:00		14	11							25
04:00		16	18							34
05:00		38	61							99
06:00		148	171							319
07:00		230	**323**							553
08:00		251	288							539
09:00		250	271							521
10:00		232	286							518
11:00		**283**	280							**563**
12:00 PM		272	281							553
01:00		275	301							576
02:00		278	252							530
03:00		348	306							654
04:00		383	365							748
05:00		**396**	**411**							**807**
06:00		268	274							542
07:00		178	180							358
08:00		178	150							328
09:00		130	131							261
10:00		64	65							129
11:00		31	32							63
Total		4298	4488							8786
Percent		48.9%	51.1%							
AM Peak	-	11:00	07:00	-	-	-	-	-	-	11:00
Vol.	-	283	323	-	-	-	-	-	-	563
PM Peak	-	17:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	396	411	-	-	-	-	-	-	807
Grand Total		4298	4488							8786
Percent		48.9%	51.1%							
ADT		ADT 8,786		AADT 8,786						

APPENDIX B. LEVEL OF SERVICE WORKSHEETS

- 2040 Background Traffic Operations..... B-1
- 2040 Total Traffic Operations..... B-43
- 2040 Traffic Operations with High School..... B-93



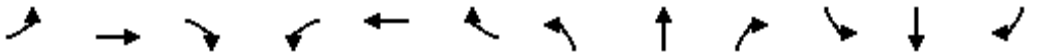
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1236	236	505	488	19	211	32	446	45	17	30
Future Volume (veh/h)	55	1236	236	505	488	19	211	32	446	45	17	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1841	1737	1856	1737	1856	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	59	1315	251	549	530	21	271	41	0	79	30	53
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.78	0.78	0.78	0.57	0.57	0.57
Percent Heavy Veh, %	4	1	4	11	3	11	3	0	5	0	0	0
Cap, veh/h	523	1699	896	619	2226	929	344	181		227	94	137
Arrive On Green	0.04	0.47	0.47	0.06	0.21	0.21	0.10	0.10	0.00	0.05	0.05	0.05
Sat Flow, veh/h	1753	3582	1560	3209	3526	1472	3428	1900	1547	1810	1900	1610
Grp Volume(v), veh/h	59	1315	251	549	530	21	271	41	0	79	30	53
Grp Sat Flow(s),veh/h/ln	1753	1791	1560	1605	1763	1472	1714	1900	1547	1810	1900	1610
Q Serve(g_s), s	2.0	36.6	9.8	20.4	15.0	1.4	9.3	2.4	0.0	4.9	1.8	3.7
Cycle Q Clear(g_c), s	2.0	36.6	9.8	20.4	15.0	1.4	9.3	2.4	0.0	4.9	1.8	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	523	1699	896	619	2226	929	344	181		227	94	137
V/C Ratio(X)	0.11	0.77	0.28	0.89	0.24	0.02	0.79	0.23		0.35	0.32	0.39
Avail Cap(c_a), veh/h	562	1699	896	695	2226	929	714	348		445	285	299
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	26.2	12.9	54.9	23.5	18.1	52.7	50.2	0.0	50.4	55.1	51.9
Incr Delay (d2), s/veh	0.1	3.5	0.8	11.5	0.2	0.0	4.0	0.6	0.0	0.9	2.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	22.0	6.4	14.7	11.4	0.8	7.5	2.1	0.0	4.1	1.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	29.7	13.7	66.4	23.7	18.1	56.8	50.9	0.0	51.3	57.1	53.7
LnGrp LOS	B	C	B	E	C	B	E	D		D	E	D
Approach Vol, veh/h		1625			1100			312	A		162	
Approach Delay, s/veh		26.7			44.9			56.0			53.2	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.2	62.9	11.5	17.4	9.3	81.8	17.0	11.9
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	21.0	22.0	7.0	48.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	22.4	38.6	6.9	4.4	4.0	17.0	11.3	5.7
Green Ext Time (p_c), s	0.8	0.0	0.1	0.1	0.0	3.6	0.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



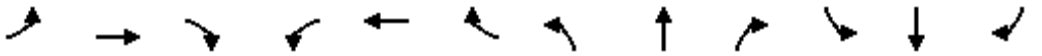
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1700	63	221	959	24	47	2	182	24	2	20
Future Volume (veh/h)	6	1700	63	221	959	24	47	2	182	24	2	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1870	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	6	1809	67	248	1078	27	58	2	225	41	3	34
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.81	0.81	0.81	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	3	2	2	0	0	1	0	0	0
Cap, veh/h	478	2022	902	325	2066	52	230	7	462	112	20	67
Arrive On Green	0.13	0.57	0.57	0.30	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1767	3543	89	1223	50	1598	476	142	477
Grp Volume(v), veh/h	6	1809	67	248	541	564	60	0	225	78	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1767	1777	1854	1273	0	1598	1095	0	0
Q Serve(g_s), s	0.0	53.6	2.3	10.7	0.0	0.0	0.0	0.0	14.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	53.6	2.3	10.7	0.0	0.0	5.5	0.0	14.0	9.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.97		1.00	0.53		0.44
Lane Grp Cap(c), veh/h	478	2022	902	325	1036	1082	236	0	462	199	0	0
V/C Ratio(X)	0.01	0.89	0.07	0.76	0.52	0.52	0.25	0.00	0.49	0.39	0.00	0.00
Avail Cap(c_a), veh/h	478	2022	902	325	1036	1082	345	0	586	303	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	22.7	11.6	25.3	0.0	0.0	46.8	0.0	35.3	48.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	0.1	14.6	1.7	1.7	0.6	0.0	0.8	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	27.6	1.5	7.1	0.9	0.9	3.0	0.0	9.4	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	26.2	11.7	39.9	1.7	1.7	47.3	0.0	36.1	50.2	0.0	0.0
LnGrp LOS	B	C	B	D	A	A	D	A	D	D	A	A
Approach Vol, veh/h		1882			1353			285			78	
Approach Delay, s/veh		25.6			8.7			38.4			50.2	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	74.3		22.7	21.3	76.0		22.7				
Change Period (Y+Rc), s	5.0	6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s	18.0	59.0		26.0	7.0	* 70		26.0				
Max Q Clear Time (g_c+I1), s	12.7	55.6		16.0	2.0	2.0		11.7				
Green Ext Time (p_c), s	0.3	3.0		0.8	0.0	8.7		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.8	
HCM 6th LOS		C	

Notes

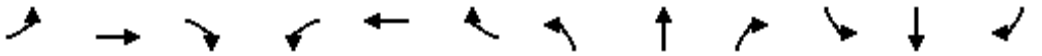
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1759	71	275	1106	31	86	4	261	171	22	53
Future Volume (veh/h)	20	1759	71	275	1106	31	86	4	261	171	22	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1856	1826	1826	1826	1159	1841	1811	1767	1900
Adj Flow Rate, veh/h	22	1912	77	306	1229	34	102	5	311	219	28	68
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.84	0.84	0.84	0.78	0.78	0.78
Percent Heavy Veh, %	0	1	1	3	5	5	5	50	4	6	9	0
Cap, veh/h	291	2177	88	331	2759	76	377	212	514	346	324	330
Arrive On Green	0.01	0.14	0.14	0.29	1.00	1.00	0.06	0.18	0.18	0.06	0.18	0.18
Sat Flow, veh/h	1810	5075	204	1767	4986	138	1739	1159	1560	1725	1767	1610
Grp Volume(v), veh/h	22	1291	698	306	819	444	102	5	311	219	28	68
Grp Sat Flow(s),veh/h/ln	1810	1716	1848	1767	1662	1801	1739	1159	1560	1725	1767	1610
Q Serve(g_s), s	0.8	44.3	44.4	15.0	0.0	0.0	5.7	0.4	20.0	7.0	1.6	4.2
Cycle Q Clear(g_c), s	0.8	44.3	44.4	15.0	0.0	0.0	5.7	0.4	20.0	7.0	1.6	4.2
Prop In Lane	1.00		0.11	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	1472	793	331	1839	997	377	212	514	346	324	330
V/C Ratio(X)	0.08	0.88	0.88	0.93	0.45	0.45	0.27	0.02	0.61	0.63	0.09	0.21
Avail Cap(c_a), veh/h	357	1472	793	441	1839	997	377	212	514	346	324	330
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.19	0.19	0.19	0.77	0.77	0.77	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	48.4	48.5	28.0	0.0	0.0	36.7	40.2	33.7	40.7	40.7	39.6
Incr Delay (d2), s/veh	0.0	1.6	3.0	17.7	0.6	1.1	0.4	0.0	2.0	3.7	0.1	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(95%),veh/ln	0.6	23.9	26.0	12.9	0.3	0.6	4.4	0.2	12.4	5.2	1.3	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	50.0	51.5	45.7	0.6	1.1	37.0	40.2	35.7	44.4	40.8	39.9
LnGrp LOS	B	D	D	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		2011			1569			418			315	
Approach Delay, s/veh		50.2			9.5			36.1			43.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	57.5	12.0	28.0	7.6	72.4	12.0	28.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	44.0	7.0	22.0	7.0	62.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	17.0	46.4	7.7	6.2	2.8	2.0	9.0	22.0
Green Ext Time (p_c), s	0.6	0.0	0.0	0.2	0.0	10.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1424	767	263	1289	0	0	0	0	1031	23	422
Future Volume (veh/h)	0	1424	767	263	1289	0	0	0	0	1031	23	422
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1856	1885	1841	0				1618	1900	1796
Adj Flow Rate, veh/h	0	1515	0	302	1482	0				1326	0	0
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87				0.79	0.79	0.79
Percent Heavy Veh, %	0	1	3	1	4	0				19	0	7
Cap, veh/h	0	1761		1200	3099	0				1349	0	
Arrive On Green	0.00	0.98	0.00	0.34	0.89	0.00				0.29	0.00	0.00
Sat Flow, veh/h	0	3676	1572	3483	3589	0				4624	0	1522
Grp Volume(v), veh/h	0	1515	0	302	1482	0				1326	0	0
Grp Sat Flow(s),veh/h/ln	0	1791	1572	1742	1749	0				1541	0	1522
Q Serve(g_s), s	0.0	5.5	0.0	7.5	10.0	0.0				34.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	5.5	0.0	7.5	10.0	0.0				34.2	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1761		1200	3099	0				1349	0	
V/C Ratio(X)	0.00	0.86		0.25	0.48	0.00				0.98	0.00	
Avail Cap(c_a), veh/h	0	1761		1200	3099	0				1349	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.56	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.6	0.0	28.2	1.3	0.0				42.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.3	0.0	0.1	0.5	0.0				20.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	2.1	0.0	5.5	1.5	0.0				21.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.9	0.0	28.3	1.9	0.0				62.7	0.0	0.0
LnGrp LOS	A	A		C	A	A				E	A	
Approach Vol, veh/h		1515	A		1784						1326	A
Approach Delay, s/veh		3.9			6.4						62.7	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	47.9	65.0		40.0		112.9
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	10.0	* 59		35.0		74.0
Max Q Clear Time (g_c+I1), s	9.5	7.5		36.2		12.0
Green Ext Time (p_c), s	0.1	16.7		0.0		16.7

Intersection Summary		
HCM 6th Ctrl Delay		21.7
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

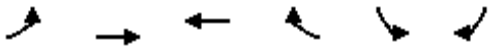
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1657	798	0	2056	439	228
Future Volume (veh/h)	1657	798	0	2056	439	228
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1900	0	1870	1841	1826
Adj Flow Rate, veh/h	1841	0	0	2235	510	0
Peak Hour Factor	0.90	0.90	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	3	0	0	2	4	5
Cap, veh/h	3712		0	3742	597	
Arrive On Green	0.73	0.00	0.00	1.00	0.18	0.00
Sat Flow, veh/h	5233	1610	0	5443	3401	2723
Grp Volume(v), veh/h	1841	0	0	2235	510	0
Grp Sat Flow(s),veh/h/ln	1689	1610	0	1702	1700	1362
Q Serve(g_s), s	18.3	0.0	0.0	0.0	17.5	0.0
Cycle Q Clear(g_c), s	18.3	0.0	0.0	0.0	17.5	0.0
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	3712		0	3742	597	
V/C Ratio(X)	0.50		0.00	0.60	0.85	
Avail Cap(c_a), veh/h	3712		0	3742	992	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.09	1.00	0.00
Uniform Delay (d), s/veh	6.7	0.0	0.0	0.0	48.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.1	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.4	0.0	0.0	0.0	12.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.2	0.0	0.0	0.1	51.9	0.0
LnGrp LOS	A		A	A	D	
Approach Vol, veh/h	1841	A		2235	510	A
Approach Delay, s/veh	7.2			0.1	51.9	
Approach LOS	A			A	D	

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	93.9			93.9	26.1
Change Period (Y+Rc), s	6.0			6.0	5.0
Max Green Setting (Gmax), s	74.0			74.0	35.0
Max Q Clear Time (g_c+I1), s	20.3			2.0	19.5
Green Ext Time (p_c), s	22.1			35.5	1.6

Intersection Summary		
HCM 6th Ctrl Delay	8.7	
HCM 6th LOS	A	

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	1707	1916	152	139	140
Future Volume (veh/h)	178	1707	1916	152	139	140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	222	2134	2555	0	170	0
Peak Hour Factor	0.80	0.80	0.75	0.75	0.82	0.82
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	1094	5151	2340		302	
Arrive On Green	0.63	1.00	0.66	0.00	0.17	0.00
Sat Flow, veh/h	3456	5191	3647	1434	1810	1560
Grp Volume(v), veh/h	222	2134	2555	0	170	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1777	1434	1810	1560
Q Serve(g_s), s	3.2	0.0	79.0	0.0	10.4	0.0
Cycle Q Clear(g_c), s	3.2	0.0	79.0	0.0	10.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1094	5151	2340		302	
V/C Ratio(X)	0.20	0.41	1.09		0.56	
Avail Cap(c_a), veh/h	1094	5151	2340		302	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	20.5	0.0	46.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	49.1	0.0	7.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.2	58.7	0.0	9.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.7	0.2	69.6	0.0	53.4	0.0
LnGrp LOS	B	A	F		D	
Approach Vol, veh/h		2356	2555	A	170	A
Approach Delay, s/veh		1.7	69.6		53.4	
Approach LOS		A	E		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		130.0		25.0	45.0	85.0
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6
Max Green Setting (Gmax), s		89.0		20.0	5.0	* 79
Max Q Clear Time (g_c+I1), s		2.0		12.4	5.2	81.0
Green Ext Time (p_c), s		34.6		0.2	0.0	0.0

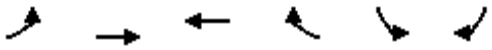
Intersection Summary	
HCM 6th Ctrl Delay	37.6
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	1707	1916	152	139	140
Future Volume (veh/h)	178	1707	1916	152	139	140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	222	2134	2555	0	170	0
Peak Hour Factor	0.80	0.80	0.75	0.75	0.82	0.82
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	1094	5151	3362		302	
Arrive On Green	0.63	1.00	0.66	0.00	0.17	0.00
Sat Flow, veh/h	3456	5191	5274	1434	1810	1560
Grp Volume(v), veh/h	222	2134	2555	0	170	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1702	1434	1810	1560
Q Serve(g_s), s	3.2	0.0	41.1	0.0	10.4	0.0
Cycle Q Clear(g_c), s	3.2	0.0	41.1	0.0	10.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1094	5151	3362		302	
V/C Ratio(X)	0.20	0.41	0.76		0.56	
Avail Cap(c_a), veh/h	1094	5151	3362		302	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	14.0	0.0	46.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	1.7	0.0	7.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.2	20.4	0.0	9.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.7	0.2	15.7	0.0	53.4	0.0
LnGrp LOS	B	A	B		D	
Approach Vol, veh/h		2356	2555	A	170	A
Approach Delay, s/veh		1.7	15.7		53.4	
Approach LOS		A	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		130.0		25.0	45.0	85.0
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6
Max Green Setting (Gmax), s		89.0		20.0	5.0	* 79
Max Q Clear Time (g_c+I1), s		2.0		12.4	5.2	43.1
Green Ext Time (p_c), s		34.6		0.2	0.0	28.0

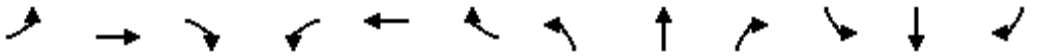
Intersection Summary	
HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



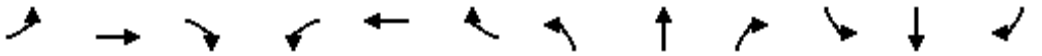
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	590	310	409	450	0	0	0	0	248	5	625
Future Volume (veh/h)	0	590	310	409	450	0	0	0	0	248	5	625
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1856	1530	1856
Adj Flow Rate, veh/h	0	648	0	460	506	0				279	6	702
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				3	25	3
Cap, veh/h	0	1204		527	1685	0				535	12	1038
Arrive On Green	0.00	0.34	0.00	0.30	1.00	0.00				0.38	0.38	0.38
Sat Flow, veh/h	0	3618	1610	3510	3243	0				1427	31	2768
Grp Volume(v), veh/h	0	648	0	460	506	0				285	0	702
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1458	0	1384
Q Serve(g_s), s	0.0	17.8	0.0	14.9	0.0	0.0				18.2	0.0	25.5
Cycle Q Clear(g_c), s	0.0	17.8	0.0	14.9	0.0	0.0				18.2	0.0	25.5
Prop In Lane	0.00		1.00	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	1204		527	1685	0				547	0	1038
V/C Ratio(X)	0.00	0.54		0.87	0.30	0.00				0.52	0.00	0.68
Avail Cap(c_a), veh/h	0	1204		731	1685	0				547	0	1038
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.85	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	31.9	0.0	40.9	0.0	0.0				29.1	0.0	31.4
Incr Delay (d2), s/veh	0.0	1.7	0.0	7.4	0.4	0.0				3.5	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	12.3	0.0	9.6	0.2	0.0				10.9	0.0	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	33.6	0.0	48.3	0.4	0.0				32.7	0.0	34.9
LnGrp LOS	A	C		D	A	A				C	A	C
Approach Vol, veh/h		648	A		966						987	
Approach Delay, s/veh		33.6			23.2						34.3	
Approach LOS		C			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	23.0	47.0		50.0		70.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	25.0	34.0		45.0		64.0
Max Q Clear Time (g_c+I1), s	16.9	19.8		27.5		2.0
Green Ext Time (p_c), s	1.1	3.7		4.4		3.8

Intersection Summary		
HCM 6th Ctrl Delay		30.0
HCM 6th LOS		C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	248	0	0	409	496	450	5	410	0	0	0
Future Volume (veh/h)	590	248	0	0	409	496	450	5	410	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	634	267	0	0	481	584	560	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	737	2312	0	0	1594	711	700	0				
Arrive On Green	0.36	1.00	0.00	0.00	0.44	0.44	0.22	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	634	267	0	0	481	584	560	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	20.6	0.0	0.0	0.0	10.3	38.1	20.4	0.0	0.0			
Cycle Q Clear(g_c), s	20.6	0.0	0.0	0.0	10.3	38.1	20.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	737	2312	0	0	1594	711	700	0				
V/C Ratio(X)	0.86	0.12	0.00	0.00	0.30	0.82	0.80	0.00				
Avail Cap(c_a), veh/h	737	2312	0	0	1594	711	700	0				
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.79	0.79	0.00	0.00	0.81	0.81	1.00	0.00	0.00			
Uniform Delay (d), s/veh	36.8	0.0	0.0	0.0	21.6	29.3	43.9	0.0	0.0			
Incr Delay (d2), s/veh	8.2	0.1	0.0	0.0	0.4	8.5	9.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	12.4	0.0	0.0	0.0	7.5	21.8	13.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.0	0.1	0.0	0.0	22.0	37.9	53.3	0.0	0.0			
LnGrp LOS	D	A	A	A	C	D	D	A				
Approach Vol, veh/h		901			1065			560	A			
Approach Delay, s/veh		31.7			30.7			53.3				
Approach LOS		C			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.8			31.8	59.0		32.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		82.0			24.0	* 53		27.0				
Max Q Clear Time (g_c+I1), s		2.0			22.6	40.1		22.4				
Green Ext Time (p_c), s		1.9			0.4	4.5		1.0				

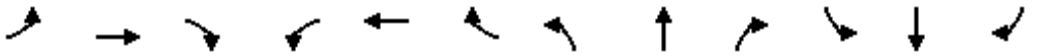
Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	666	696	338	837	119	1227	118	253	67	70	145
Future Volume (veh/h)	278	666	696	338	837	119	1227	118	253	67	70	145
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		0.89	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	309	740	0	376	930	132	1363	131	0	74	78	161
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	377	1466		507	1492	210	1451	571		104	140	292
Arrive On Green	0.04	0.10	0.00	0.14	0.34	0.34	0.48	0.51	0.00	0.06	0.08	0.08
Sat Flow, veh/h	3456	5025	1610	3510	4447	627	5023	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	309	740	0	376	711	351	1363	131	0	74	78	161
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1670	1674	1870	1585	1781	1870	1585
Q Serve(g_s), s	10.7	16.8	0.0	12.3	21.0	21.3	30.8	4.7	0.0	4.9	4.8	9.0
Cycle Q Clear(g_c), s	10.7	16.8	0.0	12.3	21.0	21.3	30.8	4.7	0.0	4.9	4.8	9.0
Prop In Lane	1.00		1.00	1.00		0.38	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	377	1466		507	1142	560	1451	571		104	140	292
V/C Ratio(X)	0.82	0.50		0.74	0.62	0.63	0.94	0.23		0.71	0.56	0.55
Avail Cap(c_a), veh/h	490	1466		507	1142	560	1507	571		386	140	292
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.55	0.55	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	46.0	0.0	49.2	33.5	33.6	30.1	21.6	0.0	55.5	53.6	44.5
Incr Delay (d2), s/veh	8.3	1.2	0.0	5.7	2.6	5.2	7.1	0.1	0.0	8.5	4.8	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(95%),veh/ln	9.1	12.2	0.0	9.6	13.7	14.2	15.0	3.5	0.0	4.4	4.4	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	47.2	0.0	54.9	36.0	38.8	37.2	21.7	0.0	64.0	58.3	46.7
LnGrp LOS	E	D		D	D	D	D	C		E	E	D
Approach Vol, veh/h		1049	A		1438			1494	A		313	
Approach Delay, s/veh		52.5			41.6			35.9			53.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.3	41.0	40.7	15.0	18.1	46.3	13.0	42.6
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	* 35	36.0	9.0	17.0	35.0	26.0	19.0
Max Q Clear Time (g_c+I1), s	14.3	18.8	32.8	11.0	12.7	23.3	6.9	6.7
Green Ext Time (p_c), s	0.4	4.4	1.8	0.0	0.4	5.2	0.1	0.4

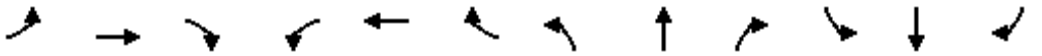
Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	7	29	46	9	411	78	1044	46	242	628	234
Future Volume (veh/h)	143	7	29	46	9	411	78	1044	46	242	628	234
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	8	32	51	10	457	87	1160	51	269	698	260
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	408	346	66	358	466	401	1592	70	416	1852	826
Arrive On Green	0.06	0.22	0.22	0.04	0.19	0.19	0.08	0.92	0.92	0.20	1.00	1.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3467	152	1781	3554	1585
Grp Volume(v), veh/h	159	8	32	51	10	457	87	594	617	269	698	260
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1843	1781	1777	1585
Q Serve(g_s), s	5.4	0.4	1.9	3.4	0.5	23.0	3.1	9.9	10.0	9.7	0.0	0.0
Cycle Q Clear(g_c), s	5.4	0.4	1.9	3.4	0.5	23.0	3.1	9.9	10.0	9.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	220	408	346	66	358	466	401	816	846	416	1852	826
V/C Ratio(X)	0.72	0.02	0.09	0.77	0.03	0.98	0.22	0.73	0.73	0.65	0.38	0.31
Avail Cap(c_a), veh/h	403	408	346	267	358	466	418	816	846	575	1852	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.86	0.54	0.54	0.54
Uniform Delay (d), s/veh	55.2	36.9	37.4	57.3	39.4	42.0	15.1	3.1	3.1	12.4	0.0	0.0
Incr Delay (d2), s/veh	4.5	0.0	0.1	16.8	0.0	36.5	0.2	4.9	4.7	0.9	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	0.3	1.4	3.3	0.4	24.9	2.2	4.5	4.6	5.2	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	36.9	37.6	74.0	39.4	78.5	15.4	8.0	7.8	13.3	0.3	0.5
LnGrp LOS	E	D	D	E	D	E	B	A	A	B	A	A
Approach Vol, veh/h		199			518			1298			1227	
Approach Delay, s/veh		55.2			77.3			8.4			3.2	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	61.1	9.5	32.2	9.8	68.5	12.6	29.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	23.0	38.0	18.0	19.0	6.0	55.0	14.0	23.0
Max Q Clear Time (g_c+I1), s	11.7	12.0	5.4	3.9	5.1	2.0	7.4	25.0
Green Ext Time (p_c), s	0.6	9.1	0.1	0.1	0.0	6.6	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

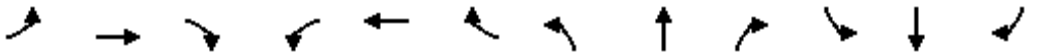
Intersection	
Int Delay, s/veh	1.8

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	239	845	141	0	1294
Future Vol, veh/h	0	239	845	141	0	1294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	266	939	157	0	1438

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	470	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	540	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	540	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	17.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	540	-
HCM Lane V/C Ratio	-	0.492	-
HCM Control Delay (s)	-	17.9	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	2.7	-



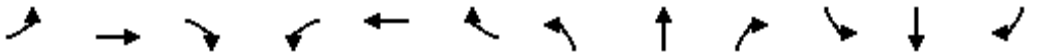
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	354	16	258	5	40	13	519	611	5	6	362	251
Future Volume (veh/h)	354	16	258	5	40	13	519	611	5	6	362	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	393	18	287	6	44	14	577	679	6	7	402	279
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	488	603	511	83	536	511	883	1965	17	168	790	352
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.26	0.54	0.54	0.22	0.22	0.22
Sat Flow, veh/h	1345	1870	1585	118	1665	1585	3456	3610	32	757	3554	1585
Grp Volume(v), veh/h	393	18	287	50	0	14	577	334	351	7	402	279
Grp Sat Flow(s),veh/h/ln	1345	1870	1585	1783	0	1585	1728	1777	1865	757	1777	1585
Q Serve(g_s), s	25.9	0.6	13.5	0.0	0.0	0.5	13.4	9.5	9.5	0.7	8.9	15.0
Cycle Q Clear(g_c), s	27.5	0.6	13.5	1.7	0.0	0.5	13.4	9.5	9.5	10.2	8.9	15.0
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	488	603	511	619	0	511	883	967	1015	168	790	352
V/C Ratio(X)	0.80	0.03	0.56	0.08	0.00	0.03	0.65	0.35	0.35	0.04	0.51	0.79
Avail Cap(c_a), veh/h	488	603	511	619	0	511	922	967	1015	168	790	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)	0.98	0.98	0.98	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	20.9	25.2	21.2	0.0	20.9	29.9	11.5	11.5	35.4	30.7	33.0
Incr Delay (d2), s/veh	9.3	0.0	1.4	0.1	0.0	0.0	1.6	1.0	0.9	0.5	2.3	16.5
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(95%),veh/ln	14.1	0.5	8.8	1.3	0.0	0.4	9.5	6.8	7.1	0.3	7.2	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	20.9	26.6	21.3	0.0	20.9	31.5	12.5	12.4	35.9	33.0	49.6
LnGrp LOS	D	C	C	C	A	C	C	B	B	D	C	D
Approach Vol, veh/h		698			64			1262			688	
Approach Delay, s/veh		34.1			21.2			21.2			39.8	
Approach LOS		C			C			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.0		35.0	29.0	26.0		35.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		49.0		29.0	24.0	* 20		29.0				
Max Q Clear Time (g_c+I1), s		11.5		29.5	15.4	17.0		3.7				
Green Ext Time (p_c), s		4.8		0.0	1.5	1.1		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			29.2									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	354	16	258	5	40	13	519	611	5	6	362	251
Future Volume (veh/h)	354	16	258	5	40	13	519	611	5	6	362	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	393	18	287	6	44	14	577	679	6	7	402	279
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	488	603	916	83	536	511	883	1965	17	168	790	352
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.26	0.54	0.54	0.22	0.22	0.22
Sat Flow, veh/h	1345	1870	1585	118	1665	1585	3456	3610	32	757	3554	1585
Grp Volume(v), veh/h	393	18	287	50	0	14	577	334	351	7	402	279
Grp Sat Flow(s),veh/h/ln	1345	1870	1585	1783	0	1585	1728	1777	1865	757	1777	1585
Q Serve(g_s), s	25.9	0.6	0.0	0.0	0.0	0.5	13.4	9.5	9.5	0.7	8.9	15.0
Cycle Q Clear(g_c), s	27.5	0.6	0.0	1.7	0.0	0.5	13.4	9.5	9.5	10.2	8.9	15.0
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	488	603	916	619	0	511	883	967	1015	168	790	352
V/C Ratio(X)	0.80	0.03	0.31	0.08	0.00	0.03	0.65	0.35	0.35	0.04	0.51	0.79
Avail Cap(c_a), veh/h	488	603	916	619	0	511	922	967	1015	168	790	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)	0.98	0.98	0.98	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.8	20.9	9.8	21.2	0.0	20.9	29.9	11.5	11.5	35.4	30.7	33.0
Incr Delay (d2), s/veh	9.3	0.0	0.2	0.1	0.0	0.0	1.6	1.0	0.9	0.5	2.3	16.5
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(95%),veh/ln	14.1	0.5	4.9	1.3	0.0	0.4	9.5	6.8	7.1	0.3	7.2	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	20.9	10.0	21.3	0.0	20.9	31.5	12.5	12.4	35.9	33.0	49.6
LnGrp LOS	D	C	A	C	A	C	C	B	B	D	C	D
Approach Vol, veh/h		698			64			1262			688	
Approach Delay, s/veh		27.3			21.2			21.2			39.8	
Approach LOS		C			C			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		55.0		35.0	29.0	26.0		35.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		49.0		29.0	24.0	* 20		29.0				
Max Q Clear Time (g_c+I1), s		11.5		29.5	15.4	17.0		3.7				
Green Ext Time (p_c), s		4.8		0.0	1.5	1.1		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			27.5									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.9

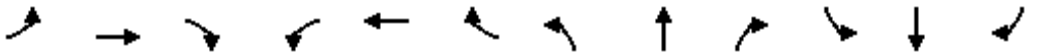
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1563	283	141	2068	0	77
Future Vol, veh/h	1563	283	141	2068	0	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	1737	314	157	2298	0	86

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2051	0	-	869
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	406	-	0	*567
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	406	-	-	*567
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	567	-	-	406	-
HCM Lane V/C Ratio	0.151	-	-	0.386	-
HCM Control Delay (s)	12.5	-	-	19.3	-
HCM Lane LOS	B	-	-	C	-
HCM 95th %tile Q(veh)	0.5	-	-	1.8	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1	64	33	1	78	80	895	30	92	481	130
Future Volume (veh/h)	195	1	64	33	1	78	80	895	30	92	481	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	1	71	37	1	87	89	994	33	102	534	144
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	377	312	265	205	130	174	572	2035	68	359	2063	920
Arrive On Green	0.13	0.17	0.17	0.03	0.07	0.07	0.04	0.58	0.58	0.08	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3510	117	1781	3554	1585
Grp Volume(v), veh/h	217	1	71	37	1	87	89	503	524	102	534	144
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1849	1781	1777	1585
Q Serve(g_s), s	13.1	0.1	4.7	2.3	0.1	6.2	2.4	19.9	19.9	2.8	0.0	0.0
Cycle Q Clear(g_c), s	13.1	0.1	4.7	2.3	0.1	6.2	2.4	19.9	19.9	2.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	377	312	265	205	130	174	572	1030	1072	359	2063	920
V/C Ratio(X)	0.58	0.00	0.27	0.18	0.01	0.50	0.16	0.49	0.49	0.28	0.26	0.16
Avail Cap(c_a), veh/h	417	468	396	241	281	302	591	1030	1072	451	2063	920
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	42.3	41.7	43.6	49.7	52.0	50.3	9.2	14.8	14.8	10.7	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.5	0.4	0.0	2.2	0.1	1.7	1.6	0.4	0.3	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(95%),veh/ln	9.9	0.0	3.4	1.9	0.1	4.6	1.6	12.8	13.2	1.8	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	41.7	44.1	50.2	52.0	52.5	9.3	16.4	16.4	11.1	0.3	0.3
LnGrp LOS	D	D	D	D	D	D	A	B	B	B	A	A
Approach Vol, veh/h		289			125			1116			780	
Approach Delay, s/veh		44.0			51.8			15.8			1.7	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	75.6	8.5	26.0	9.7	75.7	20.3	14.3
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	11.0	51.0	6.0	30.0	6.0	56.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	4.8	21.9	4.3	6.7	4.4	2.0	15.1	8.2
Green Ext Time (p_c), s	0.1	7.4	0.0	0.2	0.0	4.5	0.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	1001	83	46	1294
Future Vol, veh/h	0	22	1001	83	46	1294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	24	1112	92	51	1438

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	556	0	0	1204	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	475	-	-	587	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	475	-	-	587	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	475	587	-
HCM Lane V/C Ratio	-	-	0.051	0.087	-
HCM Control Delay (s)	-	-	13	11.7	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-

Intersection	
Int Delay, s/veh	7.3

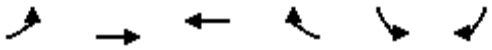
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	82	1077	1290	12	27	193
Future Vol, veh/h	82	1077	1290	12	27	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	550	-	-	-	0	175
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	84	84	89	89
Heavy Vehicles, %	2	5	2	0	4	1
Mvmt Flow	86	1134	1536	14	30	217

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1550	0	-	0	2282	775
Stage 1	-	-	-	-	1543	-
Stage 2	-	-	-	-	739	-
Critical Hdwy	4.14	-	-	-	6.88	6.92
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.22	-	-	-	3.54	3.31
Pot Cap-1 Maneuver	424	-	-	-	33	343
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	428	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	424	-	-	-	~ 26	343
Mov Cap-2 Maneuver	-	-	-	-	~ 26	-
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	428	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	83.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	424	-	-	-	26	343
HCM Lane V/C Ratio	0.204	-	-	-	1.167	0.632
HCM Control Delay (s)	15.6	-	-	-	$ 453.2	31.9
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	0.8	-	-	-	3.7	4.1

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	1077	1290	12	27	193
Future Volume (veh/h)	82	1077	1290	12	27	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870	1841	1885
Adj Flow Rate, veh/h	86	1134	1536	14	30	217
Peak Hour Factor	0.95	0.95	0.84	0.84	0.89	0.89
Percent Heavy Veh, %	2	5	2	2	4	1
Cap, veh/h	261	2351	2045	19	351	320
Arrive On Green	0.06	0.68	0.57	0.57	0.20	0.20
Sat Flow, veh/h	1781	3561	3702	33	1753	1598
Grp Volume(v), veh/h	86	1134	756	794	30	217
Grp Sat Flow(s),veh/h/ln	1781	1735	1777	1864	1753	1598
Q Serve(g_s), s	1.6	14.1	28.9	28.9	1.3	11.3
Cycle Q Clear(g_c), s	1.6	14.1	28.9	28.9	1.3	11.3
Prop In Lane	1.00			0.02	1.00	1.00
Lane Grp Cap(c), veh/h	261	2351	1007	1057	351	320
V/C Ratio(X)	0.33	0.48	0.75	0.75	0.09	0.68
Avail Cap(c_a), veh/h	518	2351	1007	1057	351	320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.60	0.60	1.00	1.00
Uniform Delay (d), s/veh	13.1	6.9	14.7	14.7	29.3	33.3
Incr Delay (d2), s/veh	0.7	0.7	3.1	3.0	0.5	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	7.2	14.5	15.1	1.0	16.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.9	7.7	17.8	17.7	29.8	44.4
LnGrp LOS	B	A	B	B	C	D
Approach Vol, veh/h		1220	1550		247	
Approach Delay, s/veh		8.1	17.8		42.6	
Approach LOS		A	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.0		23.0	10.0	57.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		61.0		18.0	18.0	38.0
Max Q Clear Time (g_c+I1), s		16.1		13.3	3.6	30.9
Green Ext Time (p_c), s		9.6		0.3	0.1	4.9

Intersection Summary	
HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	782.4

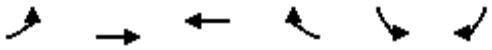
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	179	925	1183	416	278	119
Future Vol, veh/h	179	925	1183	416	278	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	550	-	-	150	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	1028	1314	462	309	132

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1776	0	-	0	2226	657
Stage 1	-	-	-	-	1314	-
Stage 2	-	-	-	-	912	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	346	-	-	-	~ 37	407
Stage 1	-	-	-	-	~ 216	-
Stage 2	-	-	-	-	352	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	346	-	-	-	~ 16	407
Mov Cap-2 Maneuver	-	-	-	-	~ 16	-
Stage 1	-	-	-	-	~ 92	-
Stage 2	-	-	-	-	352	-

Approach	EB	WB	SB
HCM Control Delay, s	4.6	0	$ 6096.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	346	-	-	-	16	407
HCM Lane V/C Ratio	0.575	-	-	-	19.306	0.325
HCM Control Delay (s)	28.6	-	-	-	$ 8698.3	18
HCM Lane LOS	D	-	-	-	F	C
HCM 95th %tile Q(veh)	3.4	-	-	-	39.5	1.4

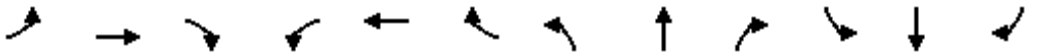
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	179	925	1183	416	278	119
Future Volume (veh/h)	179	925	1183	416	278	119
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	199	1028	1314	462	309	132
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	269	2251	1791	799	435	387
Arrive On Green	0.07	0.63	0.50	0.50	0.24	0.24
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	199	1028	1314	462	309	132
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	4.5	13.4	26.2	18.4	14.3	6.2
Cycle Q Clear(g_c), s	4.5	13.4	26.2	18.4	14.3	6.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	269	2251	1791	799	435	387
V/C Ratio(X)	0.74	0.46	0.73	0.58	0.71	0.34
Avail Cap(c_a), veh/h	335	2251	1791	799	435	387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	8.5	17.6	15.6	31.1	28.0
Incr Delay (d2), s/veh	5.8	0.6	2.7	3.0	9.4	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	7.4	15.1	10.6	11.5	10.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.7	9.1	20.3	18.7	40.5	30.4
LnGrp LOS	C	A	C	B	D	C
Approach Vol, veh/h		1227	1776		441	
Approach Delay, s/veh		11.5	19.9		37.5	
Approach LOS		B	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		63.0		27.0	11.6	51.4
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		57.0		22.0	10.0	42.0
Max Q Clear Time (g_c+I1), s		15.4		16.3	6.5	28.2
Green Ext Time (p_c), s		8.2		0.8	0.2	8.6

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B



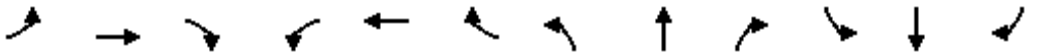
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	833	332	730	1421	23	610	26	642	128	43	66
Future Volume (veh/h)	51	833	332	730	1421	23	610	26	642	128	43	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1841	1737	1856	1737	1856	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	54	886	353	793	1545	25	670	29	0	162	54	84
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.91	0.91	0.91	0.79	0.79	0.79
Percent Heavy Veh, %	4	1	4	11	3	11	3	0	5	0	0	0
Cap, veh/h	146	968	747	864	1780	743	714	340		334	130	167
Arrive On Green	0.03	0.27	0.27	0.09	0.17	0.17	0.21	0.18	0.00	0.10	0.07	0.07
Sat Flow, veh/h	1753	3582	1560	3209	3526	1472	3428	1900	1547	1810	1900	1610
Grp Volume(v), veh/h	54	886	353	793	1545	25	670	29	0	162	54	84
Grp Sat Flow(s),veh/h/ln	1753	1791	1560	1605	1763	1472	1714	1900	1547	1810	1900	1610
Q Serve(g_s), s	2.7	28.8	18.3	29.4	51.2	1.7	23.1	1.5	0.0	9.8	3.3	5.9
Cycle Q Clear(g_c), s	2.7	28.8	18.3	29.4	51.2	1.7	23.1	1.5	0.0	9.8	3.3	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	968	747	864	1780	743	714	340		334	130	167
V/C Ratio(X)	0.37	0.92	0.47	0.92	0.87	0.03	0.94	0.09		0.49	0.41	0.50
Avail Cap(c_a), veh/h	187	968	747	909	1780	743	714	491		337	285	298
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.28	0.28	0.28	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	42.4	21.1	53.3	46.1	25.5	46.7	41.1	0.0	45.7	53.6	50.9
Incr Delay (d2), s/veh	1.6	14.5	2.1	4.6	1.8	0.0	20.0	0.1	0.0	1.1	2.1	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(95%),veh/ln	2.1	20.5	11.4	16.3	28.9	1.1	17.4	1.3	0.0	8.0	3.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	57.0	23.2	57.9	47.9	25.5	66.8	41.2	0.0	46.8	55.7	53.2
LnGrp LOS	C	E	C	E	D	C	E	D		D	E	D
Approach Vol, veh/h		1293			2363			699	A		300	
Approach Delay, s/veh		46.8			51.0			65.7			50.2	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.3	38.4	16.8	27.5	9.2	66.6	30.0	14.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	34.0	21.0	12.0	31.0	7.0	48.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	31.4	30.8	11.8	3.5	4.7	53.2	25.1	7.9
Green Ext Time (p_c), s	0.9	0.0	0.0	0.1	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	52.0
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



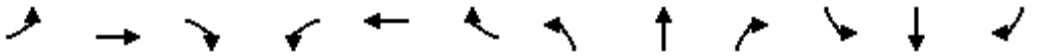
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1484	110	394	1948	32	118	8	269	28	18	28
Future Volume (veh/h)	32	1484	110	394	1948	32	118	8	269	28	18	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1870	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	35	1631	121	443	2189	36	131	9	299	33	21	33
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	3	2	2	0	0	1	0	0	0
Cap, veh/h	179	1658	740	536	2518	41	224	12	753	64	45	41
Arrive On Green	0.06	0.93	0.93	0.52	1.00	1.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1767	3578	59	778	55	1598	108	209	194
Grp Volume(v), veh/h	35	1631	121	443	1084	1141	140	0	299	87	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1767	1777	1860	833	0	1598	511	0	0
Q Serve(g_s), s	1.3	44.7	0.7	18.2	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0
Cycle Q Clear(g_c), s	1.3	44.7	0.7	18.2	0.0	0.0	20.5	0.0	0.0	23.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	0.94		1.00	0.38		0.38
Lane Grp Cap(c), veh/h	179	1658	740	536	1251	1309	236	0	753	150	0	0
V/C Ratio(X)	0.20	0.98	0.16	0.83	0.87	0.87	0.59	0.00	0.40	0.58	0.00	0.00
Avail Cap(c_a), veh/h	232	1658	740	536	1251	1309	240	0	758	155	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.16	0.16	0.58	0.58	0.58	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	3.6	2.2	24.1	0.0	0.0	45.1	0.0	20.6	45.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	5.8	0.1	6.2	5.0	5.0	3.8	0.0	0.3	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	4.1	0.4	11.3	3.1	3.3	7.6	0.0	9.3	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	9.4	2.2	30.4	5.0	5.0	48.9	0.0	21.0	50.1	0.0	0.0
LnGrp LOS	B	A	A	C	A	A	D	A	C	D	A	A
Approach Vol, veh/h		1787			2668			439			87	
Approach Delay, s/veh		9.1			9.2			29.9			50.1	
Approach LOS		A			A			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.9	62.0		31.6	8.4	90.5		31.6				
Change Period (Y+Rc), s	6.0	* 6		6.0	5.0	6.0		6.0				
Max Green Setting (Gmax), s	21.0	* 56		26.0	7.0	70.0		26.0				
Max Q Clear Time (g_c+I1), s	20.2	46.7		22.5	3.3	2.0		25.6				
Green Ext Time (p_c), s	0.1	7.2		0.7	0.0	38.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		11.7	
HCM 6th LOS		B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



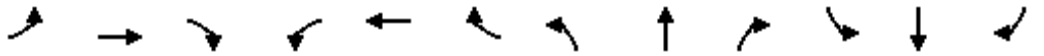
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1634	95	322	2271	16	115	14	260	193	14	52
Future Volume (veh/h)	34	1634	95	322	2271	16	115	14	260	193	14	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1856	1826	1826	1826	1159	1841	1811	1767	1900
Adj Flow Rate, veh/h	37	1776	103	362	2552	18	121	15	274	238	17	64
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.95	0.95	0.95	0.81	0.81	0.81
Percent Heavy Veh, %	0	1	1	3	5	5	5	50	4	6	9	0
Cap, veh/h	168	2180	126	385	2828	20	352	145	421	367	279	302
Arrive On Green	0.06	0.88	0.88	0.29	1.00	1.00	0.08	0.13	0.13	0.11	0.16	0.16
Sat Flow, veh/h	1810	4976	288	1767	5107	36	1739	1159	1560	1725	1767	1610
Grp Volume(v), veh/h	37	1224	655	362	1660	910	121	15	274	238	17	64
Grp Sat Flow(s),veh/h/ln	1810	1716	1833	1767	1662	1819	1739	1159	1560	1725	1767	1610
Q Serve(g_s), s	1.3	18.5	18.6	14.8	0.0	0.0	7.2	1.4	15.0	13.0	1.0	4.0
Cycle Q Clear(g_c), s	1.3	18.5	18.6	14.8	0.0	0.0	7.2	1.4	15.0	13.0	1.0	4.0
Prop In Lane	1.00		0.16	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	1503	803	385	1840	1008	352	145	421	367	279	302
V/C Ratio(X)	0.22	0.81	0.82	0.94	0.90	0.90	0.34	0.10	0.65	0.65	0.06	0.21
Avail Cap(c_a), veh/h	190	1503	803	467	1840	1008	380	145	421	367	279	302
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.8	5.3	5.3	18.9	0.0	0.0	41.2	46.5	38.8	40.4	43.0	41.3
Incr Delay (d2), s/veh	0.3	2.5	4.6	15.8	4.3	7.4	0.6	0.3	3.5	4.0	0.1	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(95%),veh/ln	1.0	4.7	5.6	8.5	2.0	3.7	5.7	0.7	12.0	10.8	0.8	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.1	7.8	9.9	34.7	4.3	7.4	41.8	46.8	42.3	44.4	43.1	41.6
LnGrp LOS	B	A	A	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1916			2932			410			319	
Approach Delay, s/veh		8.7			9.0			42.3			43.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	58.6	14.1	24.9	8.5	72.5	18.0	21.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	23.0	47.0	11.0	17.0	5.0	65.0	13.0	15.0
Max Q Clear Time (g_c+I1), s	16.8	20.6	9.2	6.0	3.3	2.0	15.0	17.0
Green Ext Time (p_c), s	0.6	15.3	0.0	0.1	0.0	39.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1362	725	233	1559	0	0	0	0	1125	54	1026
Future Volume (veh/h)	0	1362	725	233	1559	0	0	0	0	1125	54	1026
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1856	1885	1841	0				1618	1900	1796
Adj Flow Rate, veh/h	0	1602	0	256	1713	0				1293	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	3	1	4	0				19	0	7
Cap, veh/h	0	1642		362	2141	0				1369	0	
Arrive On Green	0.00	0.92	0.00	0.10	0.61	0.00				0.30	0.00	0.00
Sat Flow, veh/h	0	3676	1572	3483	3589	0				4624	0	1522
Grp Volume(v), veh/h	0	1602	0	256	1713	0				1293	0	0
Grp Sat Flow(s),veh/h/ln	0	1791	1572	1742	1749	0				1541	0	1522
Q Serve(g_s), s	0.0	42.4	0.0	8.5	44.7	0.0				32.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	42.4	0.0	8.5	44.7	0.0				32.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1642		362	2141	0				1369	0	
V/C Ratio(X)	0.00	0.98		0.71	0.80	0.00				0.94	0.00	
Avail Cap(c_a), veh/h	0	1642		377	2141	0				1387	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.59	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.5	0.0	52.0	17.7	0.0				41.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	12.3	0.0	5.7	3.2	0.0				13.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	7.5	0.0	7.1	23.9	0.0				20.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	16.7	0.0	57.7	20.9	0.0				54.3	0.0	0.0
LnGrp LOS	A	B		E	C	A				D	A	
Approach Vol, veh/h		1602	A		1969						1293	A
Approach Delay, s/veh		16.7			25.7						54.3	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.5	61.0		40.5		79.5
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	13.0	* 55		36.0		73.0
Max Q Clear Time (g_c+I1), s	10.5	44.4		34.8		46.7
Green Ext Time (p_c), s	0.2	7.4		0.8		15.2

Intersection Summary		
HCM 6th Ctrl Delay		30.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

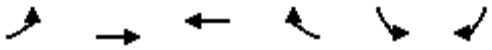
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2061	426	0	2189	745	263
Future Volume (veh/h)	2061	426	0	2189	745	263
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1900	0	1870	1841	1826
Adj Flow Rate, veh/h	2193	0	0	2379	866	0
Peak Hour Factor	0.94	0.94	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	3	0	0	2	4	5
Cap, veh/h	3176		0	3201	957	
Arrive On Green	0.63	0.00	0.00	1.00	0.28	0.00
Sat Flow, veh/h	5233	1610	0	5443	3401	2723
Grp Volume(v), veh/h	2193	0	0	2379	866	0
Grp Sat Flow(s),veh/h/ln	1689	1610	0	1702	1700	1362
Q Serve(g_s), s	34.2	0.0	0.0	0.0	29.5	0.0
Cycle Q Clear(g_c), s	34.2	0.0	0.0	0.0	29.5	0.0
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	3176		0	3201	957	
V/C Ratio(X)	0.69		0.00	0.74	0.90	
Avail Cap(c_a), veh/h	3176		0	3201	1134	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.10	1.00	0.00
Uniform Delay (d), s/veh	14.7	0.0	0.0	0.0	41.6	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	9.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.8	0.0	0.0	0.1	19.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.0	0.0	0.0	0.2	50.8	0.0
LnGrp LOS	B		A	A	D	
Approach Vol, veh/h	2193	A		2379	866	A
Approach Delay, s/veh	16.0			0.2	50.8	
Approach LOS	B			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	81.2				81.2	38.8
Change Period (Y+Rc), s	6.0				6.0	5.0
Max Green Setting (Gmax), s	69.0				69.0	40.0
Max Q Clear Time (g_c+I1), s	36.2				2.0	31.5
Green Ext Time (p_c), s	22.1				38.5	2.3

Intersection Summary		
HCM 6th Ctrl Delay	14.6	
HCM 6th LOS	B	

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



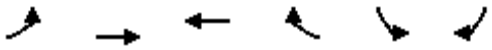
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	2203	1978	159	160	211
Future Volume (veh/h)	121	2203	1978	159	160	211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	142	2592	2222	0	211	0
Peak Hour Factor	0.85	0.85	0.89	0.89	0.76	0.76
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	202	3643	2221		332	
Arrive On Green	0.12	1.00	0.62	0.00	0.18	0.00
Sat Flow, veh/h	3456	5191	3647	1434	1810	1560
Grp Volume(v), veh/h	142	2592	2222	0	211	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1777	1434	1810	1560
Q Serve(g_s), s	4.7	0.0	75.0	0.0	12.9	0.0
Cycle Q Clear(g_c), s	4.7	0.0	75.0	0.0	12.9	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	202	3643	2221		332	
V/C Ratio(X)	0.70	0.71	1.00		0.64	
Avail Cap(c_a), veh/h	576	3643	2221		332	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	22.5	0.0	45.3	0.0
Incr Delay (d2), s/veh	3.0	0.8	19.2	0.0	9.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.5	42.6	0.0	10.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.0	0.8	41.7	0.0	54.3	0.0
LnGrp LOS	E	A	F		D	
Approach Vol, veh/h		2734	2222	A	211	A
Approach Delay, s/veh		3.6	41.7		54.3	
Approach LOS		A	D		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.0		27.0	12.0	81.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		87.0		22.0	20.0	62.0
Max Q Clear Time (g_c+I1), s		2.0		14.9	6.7	77.0
Green Ext Time (p_c), s		51.7		0.3	0.3	0.0

Intersection Summary		
HCM 6th Ctrl Delay		22.1
HCM 6th LOS		C

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



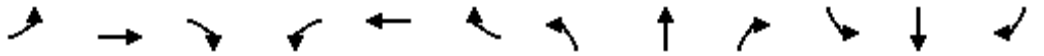
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	2203	1978	159	160	211
Future Volume (veh/h)	121	2203	1978	159	160	211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	142	2592	2222	0	211	0
Peak Hour Factor	0.85	0.85	0.89	0.89	0.76	0.76
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	202	3643	3191		332	
Arrive On Green	0.12	1.00	0.62	0.00	0.18	0.00
Sat Flow, veh/h	3456	5191	5274	1434	1810	1560
Grp Volume(v), veh/h	142	2592	2222	0	211	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1702	1434	1810	1560
Q Serve(g_s), s	4.7	0.0	34.7	0.0	12.9	0.0
Cycle Q Clear(g_c), s	4.7	0.0	34.7	0.0	12.9	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	202	3643	3191		332	
V/C Ratio(X)	0.70	0.71	0.70		0.64	
Avail Cap(c_a), veh/h	576	3643	3191		332	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	14.9	0.0	45.3	0.0
Incr Delay (d2), s/veh	3.0	0.8	1.3	0.0	9.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.5	18.2	0.0	10.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.0	0.8	16.2	0.0	54.3	0.0
LnGrp LOS	E	A	B		D	
Approach Vol, veh/h		2734	2222	A	211	A
Approach Delay, s/veh		3.6	16.2		54.3	
Approach LOS		A	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.0		27.0	12.0	81.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		87.0		22.0	20.0	62.0
Max Q Clear Time (g_c+I1), s		2.0		14.9	6.7	36.7
Green Ext Time (p_c), s		51.7		0.3	0.3	18.6

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	770	625	490	620	0	0	0	0	510	5	825
Future Volume (veh/h)	0	770	625	490	620	0	0	0	0	510	5	825
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1856	1530	1856
Adj Flow Rate, veh/h	0	846	0	551	697	0				573	6	927
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				3	25	3
Cap, veh/h	0	1205		1404	2501	0				577	6	1107
Arrive On Green	0.00	0.34	0.00	0.13	0.26	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	3618	1610	3510	3243	0				1442	15	2768
Grp Volume(v), veh/h	0	846	0	551	697	0				579	0	927
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1457	0	1384
Q Serve(g_s), s	0.0	24.9	0.0	17.2	21.1	0.0				47.5	0.0	36.3
Cycle Q Clear(g_c), s	0.0	24.9	0.0	17.2	21.1	0.0				47.5	0.0	36.3
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	1205		1404	2501	0				583	0	1107
V/C Ratio(X)	0.00	0.70		0.39	0.28	0.00				0.99	0.00	0.84
Avail Cap(c_a), veh/h	0	1205		1404	2501	0				583	0	1107
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.57	0.57	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	34.2	0.0	38.7	17.0	0.0				35.8	0.0	32.5
Incr Delay (d2), s/veh	0.0	3.4	0.0	0.1	0.2	0.0				35.7	0.0	7.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	16.5	0.0	11.7	12.6	0.0				29.2	0.0	18.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	37.7	0.0	38.8	17.2	0.0				71.5	0.0	40.1
LnGrp LOS	A	D		D	B	A				E	A	D
Approach Vol, veh/h		846	A		1248						1506	
Approach Delay, s/veh		37.7			26.7						52.1	
Approach LOS		D			C						D	

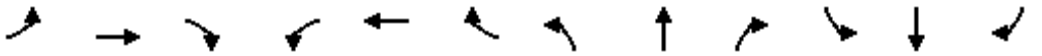
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	55.0	47.0		53.0		102.0
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	15.0	* 41		48.0		61.0
Max Q Clear Time (g_c+I1), s	19.2	26.9		49.5		23.1
Green Ext Time (p_c), s	0.0	4.9		0.0		5.4

Intersection Summary		
HCM 6th Ctrl Delay		39.9
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	510	0	0	490	312	620	5	440	0	0	0
Future Volume (veh/h)	770	510	0	0	490	312	620	5	440	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	828	548	0	0	576	367	769	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	1000	1800	0	0	752	335	1115	0				
Arrive On Green	0.49	0.92	0.00	0.00	0.21	0.21	0.36	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	828	548	0	0	576	367	769	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	24.9	2.3	0.0	0.0	18.0	25.0	25.3	0.0	0.0			
Cycle Q Clear(g_c), s	24.9	2.3	0.0	0.0	18.0	25.0	25.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1000	1800	0	0	752	335	1115	0				
V/C Ratio(X)	0.83	0.30	0.00	0.00	0.77	1.09	0.69	0.00				
Avail Cap(c_a), veh/h	1028	1800	0	0	752	335	1115	0				
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.64	0.64	0.00	0.00	0.79	0.79	1.00	0.00	0.00			
Uniform Delay (d), s/veh	28.2	2.3	0.0	0.0	44.7	47.5	32.8	0.0	0.0			
Incr Delay (d2), s/veh	3.7	0.3	0.0	0.0	5.9	71.5	3.5	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	12.6	1.2	0.0	0.0	12.9	23.6	14.7	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	2.6	0.0	0.0	50.6	119.0	36.3	0.0	0.0			
LnGrp LOS	C	A	A	A	D	F	D	A				
Approach Vol, veh/h		1376			943			769	A			
Approach Delay, s/veh		20.2			77.2			36.3				
Approach LOS		C			E			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		72.0			41.0	31.0		48.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		66.0			36.0	* 25		43.0				
Max Q Clear Time (g_c+I1), s		4.3			26.9	27.0		27.3				
Green Ext Time (p_c), s		4.1			2.3	0.0		2.7				

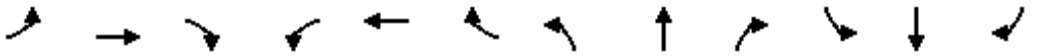
Intersection Summary												
HCM 6th Ctrl Delay			41.6									
HCM 6th LOS			D									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1228	1018	484	621	61	1416	143	315	122	158	244
Future Volume (veh/h)	161	1228	1018	484	621	61	1416	143	315	122	158	244
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	1364	0	538	690	66	1573	155	0	133	172	265
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	230	1424		1287	2806	266	1591	638		165	218	291
Arrive On Green	0.02	0.09	0.00	0.37	0.59	0.59	0.53	0.57	0.00	0.09	0.12	0.12
Sat Flow, veh/h	3456	5025	1610	3510	4743	450	5023	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	175	1364	0	538	494	262	1573	155	0	133	172	265
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1789	1674	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.0	32.4	0.0	13.8	8.3	8.4	37.1	5.0	0.0	8.8	10.7	14.0
Cycle Q Clear(g_c), s	6.0	32.4	0.0	13.8	8.3	8.4	37.1	5.0	0.0	8.8	10.7	14.0
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	230	1424		1287	2014	1059	1591	638		165	218	291
V/C Ratio(X)	0.76	0.96		0.42	0.25	0.25	0.99	0.24		0.81	0.79	0.91
Avail Cap(c_a), veh/h	230	1424		1287	2014	1059	1591	638		416	218	291
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.36	0.36	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.7	53.7	0.0	28.4	11.7	11.7	28.1	18.1	0.0	53.4	51.6	48.1
Incr Delay (d2), s/veh	13.7	15.7	0.0	0.2	0.3	0.6	11.1	0.1	0.0	9.0	17.4	31.0
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(95%),veh/ln	5.6	23.3	0.0	9.6	5.5	6.0	16.7	3.4	0.0	7.8	10.1	15.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	69.4	0.0	28.6	12.0	12.3	39.1	18.2	0.0	62.4	68.9	79.1
LnGrp LOS	E	E		C	B	B	D	B		E	E	E
Approach Vol, veh/h		1539	A		1294			1728	A		570	
Approach Delay, s/veh		69.6			19.0			37.3			72.1	
Approach LOS		E			B			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	40.0	44.0	20.0	13.0	78.0	17.1	46.9
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	* 34	38.0	14.0	8.0	37.0	28.0	24.0
Max Q Clear Time (g_c+I1), s	15.8	34.4	39.1	16.0	8.0	10.4	10.8	7.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.9	0.3	0.7

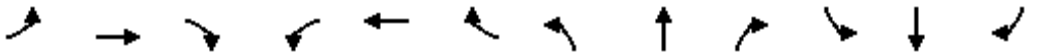
Intersection Summary	
HCM 6th Ctrl Delay	46.2
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	606	25	110	82	38	365	83	903	50	415	1073	172
Future Volume (veh/h)	606	25	110	82	38	365	83	903	50	415	1073	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	673	28	122	91	42	406	92	1003	56	461	1192	191
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	728	413	350	115	140	470	269	1058	59	476	1712	764
Arrive On Green	0.21	0.22	0.22	0.06	0.08	0.08	0.10	0.62	0.62	0.44	0.96	0.96
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3422	191	1781	3554	1585
Grp Volume(v), veh/h	673	28	122	91	42	406	92	521	538	461	1192	191
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1836	1781	1777	1585
Q Serve(g_s), s	22.9	1.4	7.8	6.0	2.5	9.0	4.2	32.4	32.4	24.5	4.5	0.7
Cycle Q Clear(g_c), s	22.9	1.4	7.8	6.0	2.5	9.0	4.2	32.4	32.4	24.5	4.5	0.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	728	413	350	115	140	470	269	550	568	476	1712	764
V/C Ratio(X)	0.92	0.07	0.35	0.79	0.30	0.86	0.34	0.95	0.95	0.97	0.70	0.25
Avail Cap(c_a), veh/h	749	413	350	252	140	470	285	550	568	482	1712	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87	0.09	0.09	0.09
Uniform Delay (d), s/veh	46.4	37.0	39.5	55.3	52.5	39.9	24.7	22.0	22.0	21.0	1.2	1.1
Incr Delay (d2), s/veh	17.0	0.1	0.6	11.3	1.2	15.2	0.7	25.0	24.5	6.7	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.1	1.2	5.6	5.5	2.2	19.1	3.1	17.3	17.7	8.4	1.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.5	37.0	40.1	66.6	53.7	55.1	25.3	47.0	46.5	27.7	1.4	1.2
LnGrp LOS	E	D	D	E	D	E	C	D	D	C	A	A
Approach Vol, veh/h		823			539			1151			1844	
Approach Delay, s/veh		59.1			56.9			45.0			8.0	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.6	43.1	12.8	32.5	10.9	63.8	30.3	15.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	27.0	36.0	17.0	18.0	7.0	56.0	26.0	9.0
Max Q Clear Time (g_c+I1), s	26.5	34.4	8.0	9.8	6.2	6.5	24.9	11.0
Green Ext Time (p_c), s	0.1	1.0	0.1	0.3	0.0	12.8	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

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

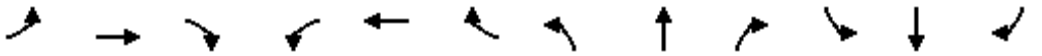
Intersection	
Int Delay, s/veh	1.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	148	1442	223	0	1166
Future Vol, veh/h	0	148	1442	223	0	1166
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	164	1602	248	0	1296

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	801	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	327	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	327	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	327	-
HCM Lane V/C Ratio	-	0.503	-
HCM Control Delay (s)	-	26.6	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	2.7	-



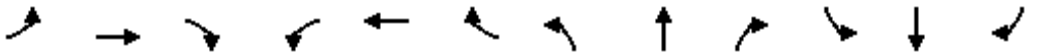
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	41	552	5	23	11	340	513	5	15	739	384
Future Volume (veh/h)	287	41	552	5	23	11	340	513	5	15	739	384
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	319	46	613	6	26	12	378	570	6	17	821	427
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	536	644	546	117	476	546	499	1881	20	265	1106	493
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.14	0.52	0.52	0.31	0.31	0.31
Sat Flow, veh/h	1370	1870	1585	203	1381	1585	3456	3602	38	837	3554	1585
Grp Volume(v), veh/h	319	46	613	32	0	12	378	281	295	17	821	427
Grp Sat Flow(s),veh/h/ln	1370	1870	1585	1584	0	1585	1728	1777	1864	837	1777	1585
Q Serve(g_s), s	18.2	1.5	31.0	0.0	0.0	0.5	9.5	8.1	8.1	1.5	18.6	22.9
Cycle Q Clear(g_c), s	19.3	1.5	31.0	1.0	0.0	0.5	9.5	8.1	8.1	9.5	18.6	22.9
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	536	644	546	593	0	546	499	928	973	265	1106	493
V/C Ratio(X)	0.59	0.07	1.12	0.05	0.00	0.02	0.76	0.30	0.30	0.06	0.74	0.87
Avail Cap(c_a), veh/h	536	644	546	593	0	546	538	928	973	265	1106	493
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)	0.95	0.95	0.95	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	19.8	29.5	19.7	0.0	19.5	37.0	12.2	12.2	27.9	27.8	29.2
Incr Delay (d2), s/veh	1.7	0.0	76.1	0.0	0.0	0.0	5.7	0.8	0.8	0.5	4.5	18.1
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(95%),veh/ln	9.8	1.1	32.8	0.8	0.0	0.3	7.7	5.8	6.1	0.6	13.1	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.8	19.9	105.6	19.7	0.0	19.5	42.7	13.0	13.0	28.3	32.3	47.4
LnGrp LOS	C	B	F	B	A	B	D	B	B	C	C	D
Approach Vol, veh/h		978			44			954			1265	
Approach Delay, s/veh		76.2			19.7			24.8			37.3	
Approach LOS		E			B			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		53.0		37.0	19.0	34.0		37.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		47.0		31.0	14.0	* 28		31.0				
Max Q Clear Time (g_c+I1), s		10.1		33.0	11.5	24.9		3.0				
Green Ext Time (p_c), s		3.9		0.0	0.4	2.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	45.1	
HCM 6th LOS	D	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	287	41	552	5	23	11	340	513	5	15	739	384
Future Volume (veh/h)	287	41	552	5	23	11	340	513	5	15	739	384
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	319	46	613	6	26	12	378	570	6	17	821	427
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	452	531	775	101	401	450	708	2099	22	275	1106	493
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.20	0.58	0.58	0.31	0.31	0.31
Sat Flow, veh/h	1370	1870	1585	190	1412	1585	3456	3602	38	837	3554	1585
Grp Volume(v), veh/h	319	46	613	32	0	12	378	281	295	17	821	427
Grp Sat Flow(s),veh/h/ln	1370	1870	1585	1602	0	1585	1728	1777	1864	837	1777	1585
Q Serve(g_s), s	19.9	1.6	10.6	0.0	0.0	0.5	8.8	7.1	7.1	1.4	18.6	22.9
Cycle Q Clear(g_c), s	21.0	1.6	10.6	1.1	0.0	0.5	8.8	7.1	7.1	8.5	18.6	22.9
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	452	531	775	502	0	450	708	1035	1086	275	1106	493
V/C Ratio(X)	0.71	0.09	0.79	0.06	0.00	0.03	0.53	0.27	0.27	0.06	0.74	0.87
Avail Cap(c_a), veh/h	535	644	871	592	0	546	708	1035	1086	275	1106	493
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)	0.95	0.95	0.95	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	23.7	19.2	23.5	0.0	23.3	31.9	9.3	9.3	27.0	27.8	29.2
Incr Delay (d2), s/veh	3.3	0.1	4.3	0.1	0.0	0.0	0.8	0.6	0.6	0.4	4.5	18.1
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(95%),veh/ln	10.8	1.3	16.1	0.9	0.0	0.3	6.6	4.9	5.1	0.6	13.1	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	23.7	23.5	23.5	0.0	23.3	32.7	10.0	9.9	27.5	32.3	47.4
LnGrp LOS	C	C	C	C	A	C	C	A	A	C	C	D
Approach Vol, veh/h		978			44			954			1265	
Approach Delay, s/veh		27.0			23.5			19.0			37.3	
Approach LOS		C			C			B			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		58.4		31.6	24.4	34.0		31.6				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		47.0		31.0	14.0	* 28		31.0				
Max Q Clear Time (g_c+I1), s		9.1		23.0	10.8	24.9		3.1				
Green Ext Time (p_c), s		3.9		2.5	0.5	2.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		28.6
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2.1

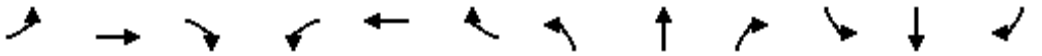
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2165	198	144	2137	0	242
Future Vol, veh/h	2165	198	144	2137	0	242
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	2406	220	160	2374	0	269

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2626	0	-	1203
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	358	-	0	*416
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	358	-	-	*416
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	28.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	416	-	-	358	-
HCM Lane V/C Ratio	0.646	-	-	0.447	-
HCM Control Delay (s)	28.2	-	-	22.9	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	4.4	-	-	2.2	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	2	123	44	5	108	94	682	24	74	1006	185
Future Volume (veh/h)	246	2	123	44	5	108	94	682	24	74	1006	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	273	2	137	49	6	120	104	758	27	82	1118	206
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	398	338	236	174	147	355	1859	66	406	1874	836
Arrive On Green	0.15	0.21	0.21	0.03	0.09	0.09	0.04	0.53	0.53	0.08	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3500	125	1781	3554	1585
Grp Volume(v), veh/h	273	2	137	49	6	120	104	385	400	82	1118	206
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1848	1781	1777	1585
Q Serve(g_s), s	16.0	0.1	8.9	3.0	0.4	8.9	3.2	15.5	15.6	2.5	0.0	0.0
Cycle Q Clear(g_c), s	16.0	0.1	8.9	3.0	0.4	8.9	3.2	15.5	15.6	2.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	447	398	338	236	174	147	355	944	982	406	1874	836
V/C Ratio(X)	0.61	0.01	0.41	0.21	0.03	0.81	0.29	0.41	0.41	0.20	0.60	0.25
Avail Cap(c_a), veh/h	530	608	515	280	343	291	457	944	982	470	1874	836
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	38.5	37.2	40.7	47.1	49.5	53.4	11.8	16.8	16.8	12.4	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.8	0.4	0.1	10.3	0.5	1.3	1.3	0.2	1.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.5	0.1	6.4	2.4	0.3	7.1	2.3	10.7	11.0	1.7	0.5	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	37.2	41.5	47.5	49.6	63.7	12.2	18.1	18.1	12.6	1.0	0.5
LnGrp LOS	D	D	D	D	D	E	B	B	B	B	A	A
Approach Vol, veh/h		412			175			889			1406	
Approach Delay, s/veh		40.5			58.6			17.4			1.6	
Approach LOS		D			E			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	69.7	9.0	31.6	10.1	69.3	23.4	17.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	9.0	43.0	7.0	39.0	12.0	40.0	24.0	22.0
Max Q Clear Time (g_c+I1), s	4.5	17.6	5.0	10.9	5.2	2.0	18.0	10.9
Green Ext Time (p_c), s	0.1	5.1	0.0	0.4	0.1	11.1	0.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	1525	65	29	1166
Future Vol, veh/h	0	25	1525	65	29	1166
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	28	1694	72	32	1296

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	847	0	0	1766	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	305	-	-	358	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	305	-	-	358	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	305	358	-
HCM Lane V/C Ratio	-	-	0.091	0.09	-
HCM Control Delay (s)	-	-	18	16	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	-

Intersection	
Int Delay, s/veh	11.2

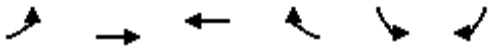
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	209	1404	1409	40	15	150
Future Vol, veh/h	209	1404	1409	40	15	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	550	-	-	-	0	175
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	92	92	79	79
Heavy Vehicles, %	0	1	2	3	0	1
Mvmt Flow	225	1510	1532	43	19	190

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1575	0	-	0	2759	788
Stage 1	-	-	-	-	1554	-
Stage 2	-	-	-	-	1205	-
Critical Hdwy	4.1	-	-	-	6.8	6.92
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	424	-	-	-	~ 16	336
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	251	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	424	-	-	-	~ 8	336
Mov Cap-2 Maneuver	-	-	-	-	~ 8	-
Stage 1	-	-	-	-	76	-
Stage 2	-	-	-	-	251	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	164.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	424	-	-	-	8	336
HCM Lane V/C Ratio	0.53	-	-	-	2.373	0.565
HCM Control Delay (s)	22.7	-	-	-	$ 1523	28.8
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	3	-	-	-	3.4	3.3

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	209	1404	1409	40	15	150
Future Volume (veh/h)	209	1404	1409	40	15	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1885	1870	1870	1900	1885
Adj Flow Rate, veh/h	225	1510	1532	43	19	190
Peak Hour Factor	0.93	0.93	0.92	0.92	0.79	0.79
Percent Heavy Veh, %	0	1	2	2	0	1
Cap, veh/h	281	2388	1877	53	382	337
Arrive On Green	0.08	0.67	0.53	0.53	0.21	0.21
Sat Flow, veh/h	1810	3676	3624	99	1810	1598
Grp Volume(v), veh/h	225	1510	770	805	19	190
Grp Sat Flow(s),veh/h/ln	1810	1791	1777	1853	1810	1598
Q Serve(g_s), s	4.7	21.9	32.2	32.4	0.8	9.6
Cycle Q Clear(g_c), s	4.7	21.9	32.2	32.4	0.8	9.6
Prop In Lane	1.00			0.05	1.00	1.00
Lane Grp Cap(c), veh/h	281	2388	945	985	382	337
V/C Ratio(X)	0.80	0.63	0.81	0.82	0.05	0.56
Avail Cap(c_a), veh/h	519	2388	945	985	382	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.43	0.43	1.00	1.00
Uniform Delay (d), s/veh	18.8	8.6	17.4	17.5	28.3	31.8
Incr Delay (d2), s/veh	5.3	1.3	3.5	3.4	0.2	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	10.9	15.7	16.4	0.6	14.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	24.1	9.9	20.9	20.8	28.5	38.4
LnGrp LOS	C	A	C	C	C	D
Approach Vol, veh/h		1735	1575		209	
Approach Delay, s/veh		11.8	20.9		37.5	
Approach LOS		B	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		66.0		24.0	12.2	53.8
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		60.0		19.0	19.0	36.0
Max Q Clear Time (g_c+I1), s		23.9		11.6	6.7	34.4
Green Ext Time (p_c), s		14.2		0.4	0.5	1.3

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2061.9

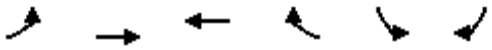
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	141	1278	1238	329	493	211
Future Vol, veh/h	141	1278	1238	329	493	211
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	550	-	-	150	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	157	1420	1376	366	548	234

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1742	0	-	0	2400	688
Stage 1	-	-	-	-	1376	-
Stage 2	-	-	-	-	1024	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	357	-	-	-	~ 28	389
Stage 1	-	-	-	-	~ 200	-
Stage 2	-	-	-	-	~ 307	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	357	-	-	-	~ 16	389
Mov Cap-2 Maneuver	-	-	-	-	~ 16	-
Stage 1	-	-	-	-	~ 112	-
Stage 2	-	-	-	-	~ 307	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	$ 10802.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	357	-	-	-	16	389
HCM Lane V/C Ratio	0.439	-	-	-	34.236	0.603
HCM Control Delay (s)	22.7	-	-	-	$ 15414.5	27.3
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	2.2	-	-	-	69.4	3.8

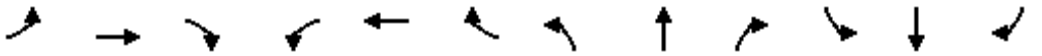
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	1278	1238	329	493	211
Future Volume (veh/h)	141	1278	1238	329	493	211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	1420	1376	366	548	234
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	215	1935	1500	669	594	528
Arrive On Green	0.07	0.54	0.42	0.42	0.33	0.33
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	157	1420	1376	366	548	234
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	4.3	27.3	32.9	15.6	26.7	10.4
Cycle Q Clear(g_c), s	4.3	27.3	32.9	15.6	26.7	10.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	215	1935	1500	669	594	528
V/C Ratio(X)	0.73	0.73	0.92	0.55	0.92	0.44
Avail Cap(c_a), veh/h	215	1935	1500	669	594	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	15.6	24.5	19.5	28.9	23.5
Incr Delay (d2), s/veh	9.1	1.9	10.4	3.2	22.2	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	14.1	20.6	9.7	20.8	15.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.5	17.4	34.9	22.7	51.0	26.1
LnGrp LOS	C	B	C	C	D	C
Approach Vol, veh/h		1577	1742		782	
Approach Delay, s/veh		18.6	32.3		43.6	
Approach LOS		B	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		55.0		35.0	11.0	44.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		49.0		30.0	6.0	38.0
Max Q Clear Time (g_c+I1), s		29.3		28.7	6.3	34.9
Green Ext Time (p_c), s		9.9		0.5	0.0	2.5

Intersection Summary	
HCM 6th Ctrl Delay	29.2
HCM 6th LOS	C



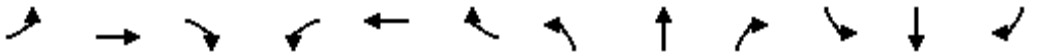
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1242	236	505	505	19	211	32	446	45	17	30
Future Volume (veh/h)	55	1242	236	505	505	19	211	32	446	45	17	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1841	1737	1856	1737	1856	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	59	1321	251	549	549	21	271	41	0	79	30	53
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.78	0.78	0.78	0.57	0.57	0.57
Percent Heavy Veh, %	4	1	4	11	3	11	3	0	5	0	0	0
Cap, veh/h	516	1699	896	619	2226	929	344	181		227	94	137
Arrive On Green	0.04	0.47	0.47	0.06	0.21	0.21	0.10	0.10	0.00	0.05	0.05	0.05
Sat Flow, veh/h	1753	3582	1560	3209	3526	1472	3428	1900	1547	1810	1900	1610
Grp Volume(v), veh/h	59	1321	251	549	549	21	271	41	0	79	30	53
Grp Sat Flow(s),veh/h/ln	1753	1791	1560	1605	1763	1472	1714	1900	1547	1810	1900	1610
Q Serve(g_s), s	2.0	36.9	9.8	20.4	15.6	1.4	9.3	2.4	0.0	4.9	1.8	3.7
Cycle Q Clear(g_c), s	2.0	36.9	9.8	20.4	15.6	1.4	9.3	2.4	0.0	4.9	1.8	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	516	1699	896	619	2226	929	344	181		227	94	137
V/C Ratio(X)	0.11	0.78	0.28	0.89	0.25	0.02	0.79	0.23		0.35	0.32	0.39
Avail Cap(c_a), veh/h	555	1699	896	695	2226	929	714	348		445	285	299
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	26.3	12.9	54.9	23.7	18.1	52.7	50.2	0.0	50.4	55.1	51.9
Incr Delay (d2), s/veh	0.1	3.6	0.8	11.5	0.2	0.0	4.0	0.6	0.0	0.9	2.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	22.2	6.4	14.7	11.7	0.8	7.5	2.1	0.0	4.1	1.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	29.9	13.7	66.4	23.9	18.1	56.8	50.9	0.0	51.3	57.1	53.7
LnGrp LOS	B	C	B	E	C	B	E	D		D	E	D
Approach Vol, veh/h		1631			1119			312	A		162	
Approach Delay, s/veh		26.8			44.7			56.0			53.2	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.2	62.9	11.5	17.4	9.3	81.8	17.0	11.9
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	21.0	22.0	7.0	48.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	22.4	38.9	6.9	4.4	4.0	17.6	11.3	5.7
Green Ext Time (p_c), s	0.8	0.0	0.1	0.1	0.0	3.8	0.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	37.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



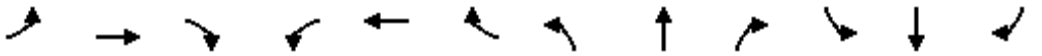
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1706	63	221	976	24	47	2	182	24	2	20
Future Volume (veh/h)	6	1706	63	221	976	24	47	2	182	24	2	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1870	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	6	1815	67	248	1097	27	58	2	225	41	3	34
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.81	0.81	0.81	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	3	2	2	0	0	1	0	0	0
Cap, veh/h	474	2022	902	325	2067	51	230	7	462	112	20	67
Arrive On Green	0.13	0.57	0.57	0.30	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1767	3544	87	1223	50	1598	476	142	477
Grp Volume(v), veh/h	6	1815	67	248	550	574	60	0	225	78	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1767	1777	1855	1273	0	1598	1095	0	0
Q Serve(g_s), s	0.0	54.0	2.3	10.7	0.0	0.0	0.0	0.0	14.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	54.0	2.3	10.7	0.0	0.0	5.5	0.0	14.0	9.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.97		1.00	0.53		0.44
Lane Grp Cap(c), veh/h	474	2022	902	325	1036	1082	236	0	462	199	0	0
V/C Ratio(X)	0.01	0.90	0.07	0.76	0.53	0.53	0.25	0.00	0.49	0.39	0.00	0.00
Avail Cap(c_a), veh/h	474	2022	902	325	1036	1082	345	0	586	303	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.48	0.48	0.48	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.0	22.8	11.6	25.3	0.0	0.0	46.8	0.0	35.3	48.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	0.1	14.6	1.8	1.7	0.6	0.0	0.8	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	27.7	1.5	7.1	0.9	0.9	3.0	0.0	9.4	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	26.3	11.7	39.9	1.8	1.7	47.3	0.0	36.1	50.2	0.0	0.0
LnGrp LOS	B	C	B	D	A	A	D	A	D	D	A	A
Approach Vol, veh/h		1888			1372			285			78	
Approach Delay, s/veh		25.7			8.7			38.4			50.2	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	74.3		22.7	21.3	76.0		22.7				
Change Period (Y+Rc), s	5.0	6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s	18.0	59.0		26.0	7.0	* 70		26.0				
Max Q Clear Time (g_c+I1), s	12.7	56.0		16.0	2.0	2.0		11.7				
Green Ext Time (p_c), s	0.3	2.7		0.8	0.0	9.0		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.8	
HCM 6th LOS		C	

Notes

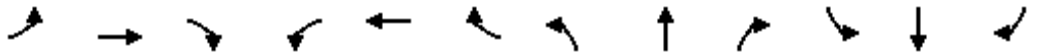
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1765	71	275	1123	31	86	4	261	171	22	53
Future Volume (veh/h)	20	1765	71	275	1123	31	86	4	261	171	22	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1856	1826	1826	1826	1159	1841	1811	1767	1900
Adj Flow Rate, veh/h	22	1918	77	306	1248	34	102	5	311	219	28	68
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.84	0.84	0.84	0.78	0.78	0.78
Percent Heavy Veh, %	0	1	1	3	5	5	5	50	4	6	9	0
Cap, veh/h	287	2177	87	331	2760	75	377	212	514	346	324	330
Arrive On Green	0.01	0.14	0.14	0.29	1.00	1.00	0.06	0.18	0.18	0.06	0.18	0.18
Sat Flow, veh/h	1810	5076	203	1767	4989	136	1739	1159	1560	1725	1767	1610
Grp Volume(v), veh/h	22	1295	700	306	831	451	102	5	311	219	28	68
Grp Sat Flow(s),veh/h/ln	1810	1716	1849	1767	1662	1801	1739	1159	1560	1725	1767	1610
Q Serve(g_s), s	0.8	44.4	44.6	15.0	0.0	0.0	5.7	0.4	20.0	7.0	1.6	4.2
Cycle Q Clear(g_c), s	0.8	44.4	44.6	15.0	0.0	0.0	5.7	0.4	20.0	7.0	1.6	4.2
Prop In Lane	1.00		0.11	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	1471	793	331	1839	997	377	212	514	346	324	330
V/C Ratio(X)	0.08	0.88	0.88	0.93	0.45	0.45	0.27	0.02	0.60	0.63	0.09	0.21
Avail Cap(c_a), veh/h	353	1471	793	440	1839	997	377	212	514	346	324	330
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.18	0.18	0.18	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	48.5	48.6	28.1	0.0	0.0	36.7	40.2	33.7	40.7	40.7	39.6
Incr Delay (d2), s/veh	0.0	1.6	2.9	17.0	0.6	1.1	0.4	0.0	2.0	3.7	0.1	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(95%),veh/ln	0.6	23.9	26.0	12.7	0.3	0.5	4.4	0.2	12.4	5.2	1.3	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	50.1	51.5	45.1	0.6	1.1	37.0	40.2	35.7	44.4	40.8	39.9
LnGrp LOS	B	D	D	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		2017			1588			418			315	
Approach Delay, s/veh		50.2			9.3			36.1			43.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	57.5	12.0	28.0	7.6	72.4	12.0	28.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	44.0	7.0	22.0	7.0	62.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	17.0	46.6	7.7	6.2	2.8	2.0	9.0	22.0
Green Ext Time (p_c), s	0.6	0.0	0.0	0.2	0.0	11.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1430	767	262	1306	0	0	0	0	1066	23	422
Future Volume (veh/h)	0	1430	767	262	1306	0	0	0	0	1066	23	422
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1856	1885	1841	0				1618	1900	1796
Adj Flow Rate, veh/h	0	1521	0	301	1501	0				1370	0	0
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87				0.79	0.79	0.79
Percent Heavy Veh, %	0	1	3	1	4	0				19	0	7
Cap, veh/h	0	1701		780	2620	0				1447	0	
Arrive On Green	0.00	0.95	0.00	0.22	0.75	0.00				0.31	0.00	0.00
Sat Flow, veh/h	0	3676	1572	3483	3589	0				4624	0	1522
Grp Volume(v), veh/h	0	1521	0	301	1501	0				1370	0	0
Grp Sat Flow(s),veh/h/ln	0	1791	1572	1742	1749	0				1541	0	1522
Q Serve(g_s), s	0.0	16.9	0.0	8.8	22.6	0.0				34.7	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.9	0.0	8.8	22.6	0.0				34.7	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1701		780	2620	0				1447	0	
V/C Ratio(X)	0.00	0.89		0.39	0.57	0.00				0.95	0.00	
Avail Cap(c_a), veh/h	0	1701		780	2620	0				1464	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.55	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.0	0.0	39.5	6.6	0.0				40.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.5	0.0	0.3	0.9	0.0				12.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	3.8	0.0	6.7	11.3	0.0				21.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.5	0.0	39.9	7.5	0.0				53.2	0.0	0.0
LnGrp LOS	A	A		D	A	A				D	A	
Approach Vol, veh/h		1521	A		1802						1370	A
Approach Delay, s/veh		6.5			12.9						53.2	
Approach LOS		A			B						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	33.4	63.0		42.5		96.4
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	9.0	* 57		38.0		71.0
Max Q Clear Time (g_c+I1), s	10.8	18.9		36.7		24.6
Green Ext Time (p_c), s	0.0	15.3		0.8		16.0

Intersection Summary		
HCM 6th Ctrl Delay		22.6
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

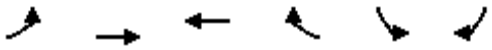
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1698	798	0	2157	439	227
Future Volume (veh/h)	1698	798	0	2157	439	227
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1900	0	1870	1841	1826
Adj Flow Rate, veh/h	1887	0	0	2345	510	0
Peak Hour Factor	0.90	0.90	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	3	0	0	2	4	5
Cap, veh/h	3712		0	3742	597	
Arrive On Green	0.73	0.00	0.00	1.00	0.18	0.00
Sat Flow, veh/h	5233	1610	0	5443	3401	2723
Grp Volume(v), veh/h	1887	0	0	2345	510	0
Grp Sat Flow(s),veh/h/ln	1689	1610	0	1702	1700	1362
Q Serve(g_s), s	19.0	0.0	0.0	0.0	17.5	0.0
Cycle Q Clear(g_c), s	19.0	0.0	0.0	0.0	17.5	0.0
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	3712		0	3742	597	
V/C Ratio(X)	0.51		0.00	0.63	0.85	
Avail Cap(c_a), veh/h	3712		0	3742	992	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.50	1.00	0.00
Uniform Delay (d), s/veh	6.8	0.0	0.0	0.0	48.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.7	0.0	0.0	0.3	12.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.3	0.0	0.0	0.4	51.9	0.0
LnGrp LOS	A		A	A	D	
Approach Vol, veh/h	1887	A		2345	510	A
Approach Delay, s/veh	7.3			0.4	51.9	
Approach LOS	A			A	D	

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	93.9			93.9	26.1
Change Period (Y+Rc), s	6.0			6.0	5.0
Max Green Setting (Gmax), s	74.0			74.0	35.0
Max Q Clear Time (g_c+I1), s	21.0			2.0	19.5
Green Ext Time (p_c), s	22.9			38.9	1.6

Intersection Summary	
HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	1747	2017	196	157	140
Future Volume (veh/h)	178	1747	2017	196	157	140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	222	2184	2689	0	191	0
Peak Hour Factor	0.80	0.80	0.75	0.75	0.82	0.82
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	1094	5109	3319		317	
Arrive On Green	0.63	1.00	0.65	0.00	0.17	0.00
Sat Flow, veh/h	3456	5191	5274	1434	1810	1560
Grp Volume(v), veh/h	222	2184	2689	0	191	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1702	1434	1810	1560
Q Serve(g_s), s	3.2	0.0	46.7	0.0	11.7	0.0
Cycle Q Clear(g_c), s	3.2	0.0	46.7	0.0	11.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1094	5109	3319		317	
V/C Ratio(X)	0.20	0.43	0.81		0.60	
Avail Cap(c_a), veh/h	1094	5109	3319		317	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	15.5	0.0	45.7	0.0
Incr Delay (d2), s/veh	0.1	0.2	2.3	0.0	8.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.2	23.1	0.0	9.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.7	0.2	17.8	0.0	53.9	0.0
LnGrp LOS	B	A	B		D	
Approach Vol, veh/h		2406	2689	A	191	A
Approach Delay, s/veh		1.6	17.8		53.9	
Approach LOS		A	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		129.0		26.0	45.0	84.0
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6
Max Green Setting (Gmax), s		88.0		21.0	5.0	* 78
Max Q Clear Time (g_c+I1), s		2.0		13.7	5.2	48.7
Green Ext Time (p_c), s		36.3		0.3	0.0	24.7

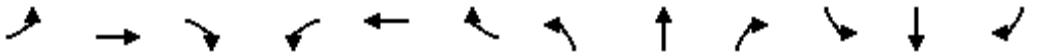
Intersection Summary	
HCM 6th Ctrl Delay	11.7
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



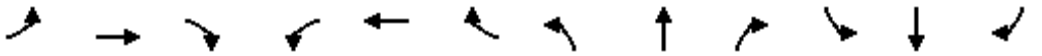
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	602	310	495	477	0	0	0	0	362	5	625
Future Volume (veh/h)	0	602	310	495	477	0	0	0	0	362	5	625
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1856	1530	1856
Adj Flow Rate, veh/h	0	662	0	556	536	0				407	6	702
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				3	25	3
Cap, veh/h	0	1111		620	1685	0				539	8	1038
Arrive On Green	0.00	0.32	0.00	0.29	0.89	0.00				0.38	0.38	0.38
Sat Flow, veh/h	0	3618	1610	3510	3243	0				1436	21	2768
Grp Volume(v), veh/h	0	662	0	556	536	0				413	0	702
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1458	0	1384
Q Serve(g_s), s	0.0	19.0	0.0	18.2	3.1	0.0				29.7	0.0	25.5
Cycle Q Clear(g_c), s	0.0	19.0	0.0	18.2	3.1	0.0				29.7	0.0	25.5
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	1111		620	1685	0				547	0	1038
V/C Ratio(X)	0.00	0.60		0.90	0.32	0.00				0.76	0.00	0.68
Avail Cap(c_a), veh/h	0	1111		731	1685	0				547	0	1038
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.83	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	34.7	0.0	41.3	3.2	0.0				32.7	0.0	31.4
Incr Delay (d2), s/veh	0.0	2.4	0.0	10.6	0.4	0.0				9.4	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	13.2	0.0	12.0	1.6	0.0				16.9	0.0	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	37.0	0.0	51.9	3.6	0.0				42.1	0.0	34.9
LnGrp LOS	A	D		D	A	A				D	A	C
Approach Vol, veh/h		662	A		1092						1115	
Approach Delay, s/veh		37.0			28.2						37.6	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.2	43.8		50.0		70.0
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0
Max Green Setting (Gmax), s	25.0	34.0		45.0		64.0
Max Q Clear Time (g_c+I1), s	20.2	21.0		31.7		5.1
Green Ext Time (p_c), s	1.0	3.6		4.6		4.1

Intersection Summary		
HCM 6th Ctrl Delay		33.9
HCM 6th LOS		C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	602	310	495	477	0	0	0	0	362	5	625
Future Volume (veh/h)	0	602	310	495	477	0	0	0	0	362	5	625
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1781	1530	1856
Adj Flow Rate, veh/h	0	662	0	556	536	0				411	0	702
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				8	25	3
Cap, veh/h	0	1161		628	1738	0				1216	0	1127
Arrive On Green	0.00	0.33	0.00	0.30	0.92	0.00				0.36	0.00	0.36
Sat Flow, veh/h	0	3618	1610	3510	3243	0				3393	0	3145
Grp Volume(v), veh/h	0	662	0	556	536	0				411	0	702
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1697	0	1572
Q Serve(g_s), s	0.0	18.6	0.0	18.1	2.3	0.0				10.6	0.0	22.1
Cycle Q Clear(g_c), s	0.0	18.6	0.0	18.1	2.3	0.0				10.6	0.0	22.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1161		628	1738	0				1216	0	1127
V/C Ratio(X)	0.00	0.57		0.89	0.31	0.00				0.34	0.00	0.62
Avail Cap(c_a), veh/h	0	1161		819	1738	0				1216	0	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.83	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	33.2	0.0	40.9	2.3	0.0				28.1	0.0	31.8
Incr Delay (d2), s/veh	0.0	2.0	0.0	7.9	0.4	0.0				0.8	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	12.9	0.0	11.7	1.2	0.0				7.7	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	35.3	0.0	48.8	2.7	0.0				28.9	0.0	34.4
LnGrp LOS	A	D		D	A	A				C	A	C
Approach Vol, veh/h		662	A		1092						1113	
Approach Delay, s/veh		35.3			26.2						32.4	
Approach LOS		D			C						C	

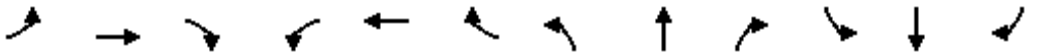
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	26.5	45.5		48.0		72.0						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	28.0	33.0		43.0		66.0						
Max Q Clear Time (g_c+I1), s	20.1	20.6		24.1		4.3						
Green Ext Time (p_c), s	1.4	3.5		4.4		4.1						

Intersection Summary												
HCM 6th Ctrl Delay			30.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	374	0	0	522	765	450	5	446	0	0	0
Future Volume (veh/h)	590	374	0	0	522	765	450	5	446	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	634	402	0	0	614	900	560	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	737	2312	0	0	1594	711	700	0				
Arrive On Green	0.36	1.00	0.00	0.00	0.44	0.44	0.22	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	634	402	0	0	614	900	560	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	20.6	0.0	0.0	0.0	13.7	53.0	20.4	0.0	0.0			
Cycle Q Clear(g_c), s	20.6	0.0	0.0	0.0	13.7	53.0	20.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	737	2312	0	0	1594	711	700	0				
V/C Ratio(X)	0.86	0.17	0.00	0.00	0.39	1.27	0.80	0.00				
Avail Cap(c_a), veh/h	737	2312	0	0	1594	711	700	0				
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	0.47	0.47	1.00	0.00	0.00			
Uniform Delay (d), s/veh	36.8	0.0	0.0	0.0	22.5	33.5	43.9	0.0	0.0			
Incr Delay (d2), s/veh	7.7	0.1	0.0	0.0	0.3	124.9	9.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	12.2	0.1	0.0	0.0	8.5	61.3	13.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	0.1	0.0	0.0	22.9	158.4	53.3	0.0	0.0			
LnGrp LOS	D	A	A	A	C	F	D	A				
Approach Vol, veh/h		1036			1514			560	A			
Approach Delay, s/veh		27.3			103.4			53.3				
Approach LOS		C			F			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.8			31.8	59.0		32.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		82.0			24.0	* 53		27.0				
Max Q Clear Time (g_c+I1), s		2.0			22.6	55.0		22.4				
Green Ext Time (p_c), s		2.9			0.4	0.0		1.0				

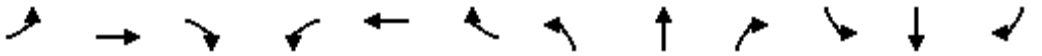
Intersection Summary	
HCM 6th Ctrl Delay	69.0
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	374	0	0	522	765	450	5	446	0	0	0
Future Volume (veh/h)	590	374	0	0	522	765	450	5	446	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	634	402	0	0	614	0	560	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	737	2312	0	0	1594		700	0				
Arrive On Green	0.36	1.00	0.00	0.00	0.44	0.00	0.22	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	634	402	0	0	614	0	560	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	20.6	0.0	0.0	0.0	13.7	0.0	20.4	0.0	0.0			
Cycle Q Clear(g_c), s	20.6	0.0	0.0	0.0	13.7	0.0	20.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	737	2312	0	0	1594		700	0				
V/C Ratio(X)	0.86	0.17	0.00	0.00	0.39		0.80	0.00				
Avail Cap(c_a), veh/h	737	2312	0	0	1594		700	0				
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.82	0.82	0.00	0.00	0.53	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	36.8	0.0	0.0	0.0	22.5	0.0	43.9	0.0	0.0			
Incr Delay (d2), s/veh	8.5	0.1	0.0	0.0	0.4	0.0	9.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	12.6	0.1	0.0	0.0	8.7	0.0	13.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.1	0.0	0.0	22.9	0.0	53.3	0.0	0.0			
LnGrp LOS	D	A	A	A	C		D	A				
Approach Vol, veh/h		1036			614	A		560	A			
Approach Delay, s/veh		27.8			22.9			53.3				
Approach LOS		C			C			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		90.8			31.8	59.0		32.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		82.0			24.0	* 53		27.0				
Max Q Clear Time (g_c+I1), s		2.0			22.6	15.7		22.4				
Green Ext Time (p_c), s		2.9			0.4	4.5		1.0				

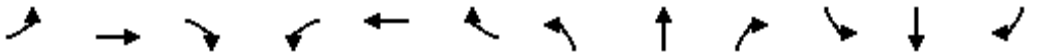
Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	664	758	413	836	118	1373	120	430	66	72	144
Future Volume (veh/h)	277	664	758	413	836	118	1373	120	430	66	72	144
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		0.92	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	308	738	0	459	929	131	1526	133	0	73	80	160
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	376	1424		830	1874	263	1549	608		104	140	291
Arrive On Green	0.04	0.09	0.00	0.24	0.42	0.42	0.51	0.54	0.00	0.06	0.08	0.08
Sat Flow, veh/h	3456	5025	1610	3510	4467	626	5023	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	308	738	0	459	707	353	1526	133	0	73	80	160
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1689	1674	1870	1585	1781	1870	1585
Q Serve(g_s), s	10.6	16.8	0.0	13.8	18.3	18.4	35.9	4.4	0.0	4.8	5.0	9.0
Cycle Q Clear(g_c), s	10.6	16.8	0.0	13.8	18.3	18.4	35.9	4.4	0.0	4.8	5.0	9.0
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	376	1424		830	1428	709	1549	608		104	140	291
V/C Ratio(X)	0.82	0.52		0.55	0.49	0.50	0.99	0.22		0.71	0.57	0.55
Avail Cap(c_a), veh/h	490	1424		830	1428	709	1549	608		401	140	291
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.25	0.25	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	46.6	0.0	40.2	25.5	25.6	28.8	19.5	0.0	55.5	53.6	44.5
Incr Delay (d2), s/veh	8.3	1.4	0.0	0.8	1.2	2.5	8.4	0.0	0.0	8.4	5.4	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(95%),veh/ln	9.1	12.2	0.0	9.9	11.8	12.2	15.4	3.0	0.0	4.3	4.6	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	47.9	0.0	41.0	26.7	28.1	37.2	19.6	0.0	64.0	59.0	46.6
LnGrp LOS	E	D		D	C	C	D	B		E	E	D
Approach Vol, veh/h		1046	A		1519			1659	A		313	
Approach Delay, s/veh		52.9			31.4			35.8			53.8	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.4	40.0	43.0	15.0	18.1	56.4	13.0	45.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	* 34	37.0	9.0	17.0	34.0	27.0	19.0
Max Q Clear Time (g_c+I1), s	15.8	18.8	37.9	11.0	12.6	20.4	6.8	6.4
Green Ext Time (p_c), s	0.2	4.2	0.0	0.0	0.4	5.6	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes

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

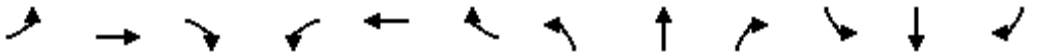
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	7	32	47	9	410	81	1376	47	240	772	231
Future Volume (veh/h)	137	7	32	47	9	410	81	1376	47	240	772	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	8	36	52	10	456	90	1529	52	267	858	257
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	402	341	68	358	508	356	1524	52	290	1852	826
Arrive On Green	0.06	0.21	0.21	0.04	0.19	0.19	0.09	0.87	0.87	0.26	1.00	1.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3507	119	1781	3554	1585
Grp Volume(v), veh/h	152	8	36	52	10	456	90	773	808	267	858	257
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1849	1781	1777	1585
Q Serve(g_s), s	5.2	0.4	2.2	3.5	0.5	23.0	3.4	52.2	52.2	13.3	0.0	0.0
Cycle Q Clear(g_c), s	5.2	0.4	2.2	3.5	0.5	23.0	3.4	52.2	52.2	13.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	212	402	341	68	358	508	356	772	804	290	1852	826
V/C Ratio(X)	0.72	0.02	0.11	0.77	0.03	0.90	0.25	1.00	1.01	0.92	0.46	0.31
Avail Cap(c_a), veh/h	374	402	341	267	358	508	369	772	804	327	1852	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.73	0.73	0.73	0.35	0.35	0.35
Uniform Delay (d), s/veh	55.3	37.1	37.8	57.2	39.4	38.9	16.5	7.8	7.8	30.9	0.0	0.0
Incr Delay (d2), s/veh	4.5	0.0	0.1	16.5	0.0	18.5	0.3	27.9	28.4	13.1	0.3	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(95%),veh/ln	4.3	0.3	1.6	3.4	0.4	21.7	2.4	13.3	14.0	10.2	0.1	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.8	37.2	38.0	73.7	39.4	57.3	16.8	35.7	36.3	44.0	0.3	0.3
LnGrp LOS	E	D	D	E	D	E	B	F	F	D	A	A
Approach Vol, veh/h		196			518			1671			1382	
Approach Delay, s/veh		54.9			58.6			35.0			8.7	
Approach LOS		D			E			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	58.2	9.6	31.8	10.1	68.5	12.3	29.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	18.0	44.0	18.0	18.0	6.0	56.0	13.0	23.0
Max Q Clear Time (g_c+I1), s	15.3	54.2	5.5	4.2	5.4	2.0	7.2	25.0
Green Ext Time (p_c), s	0.2	0.0	0.1	0.1	0.0	8.5	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	7	32	47	9	410	81	1376	47	240	772	231
Future Volume (veh/h)	137	7	32	47	9	410	81	1376	47	240	772	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	8	36	52	10	456	90	1529	52	267	858	257
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	402	340	68	358	513	322	1535	685	296	1853	827
Arrive On Green	0.06	0.21	0.21	0.04	0.19	0.19	0.04	0.43	0.43	0.13	0.52	0.52
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	152	8	36	52	10	456	90	1529	52	267	858	257
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.2	0.4	2.2	3.5	0.5	23.0	3.4	51.5	2.3	13.5	18.3	11.1
Cycle Q Clear(g_c), s	5.2	0.4	2.2	3.5	0.5	23.0	3.4	51.5	2.3	13.5	18.3	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	402	340	68	358	513	322	1535	685	296	1853	827
V/C Ratio(X)	0.72	0.02	0.11	0.77	0.03	0.89	0.28	1.00	0.08	0.90	0.46	0.31
Avail Cap(c_a), veh/h	346	402	340	252	358	513	336	1535	685	358	1853	827
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	0.73	0.73	0.73	0.70	0.70	0.70
Uniform Delay (d), s/veh	55.3	37.2	37.9	57.2	39.4	38.5	17.7	34.0	20.0	38.0	18.1	16.4
Incr Delay (d2), s/veh	4.6	0.0	0.1	16.5	0.0	17.2	0.3	18.7	0.2	16.9	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	0.3	1.6	3.4	0.4	21.4	2.5	32.3	1.6	13.3	11.2	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	37.2	38.0	73.7	39.4	55.7	18.1	52.7	20.2	55.0	18.7	17.1
LnGrp LOS	E	D	D	E	D	E	B	D	C	D	B	B
Approach Vol, veh/h		196			518			1671			1382	
Approach Delay, s/veh		55.0			57.2			49.8			25.4	
Approach LOS		D			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	57.8	9.6	31.8	10.1	68.6	12.3	29.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	20.0	43.0	17.0	18.0	6.0	57.0	12.0	23.0
Max Q Clear Time (g_c+I1), s	15.5	53.5	5.5	4.2	5.4	20.3	7.2	25.0
Green Ext Time (p_c), s	0.3	0.0	0.1	0.1	0.0	8.1	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	42.2
HCM 6th LOS	D

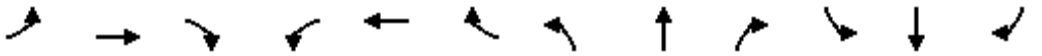
Intersection	
Int Delay, s/veh	2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	238	1020	140	0	1367
Future Vol, veh/h	0	238	1020	140	0	1367
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	264	1133	156	0	1519

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	567	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	467	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	467	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	467	-
HCM Lane V/C Ratio	-	0.566	-
HCM Control Delay (s)	-	22.3	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	3.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	16	423	5	40	13	904	955	5	6	518	248
Future Volume (veh/h)	351	16	423	5	40	13	904	955	5	6	518	248
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	390	18	470	6	44	14	1004	1061	6	7	576	276
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	442	540	1006	76	476	458	1196	2260	13	109	750	335
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.35	0.62	0.62	0.21	0.21	0.21
Sat Flow, veh/h	1345	1870	1585	108	1648	1585	3456	3623	20	529	3554	1585
Grp Volume(v), veh/h	390	18	470	50	0	14	1004	520	547	7	576	276
Grp Sat Flow(s),veh/h/ln	1345	1870	1585	1756	0	1585	1728	1777	1867	529	1777	1585
Q Serve(g_s), s	24.2	0.6	0.0	0.0	0.0	0.6	24.1	14.0	14.0	1.1	13.7	15.0
Cycle Q Clear(g_c), s	26.0	0.6	0.0	1.8	0.0	0.6	24.1	14.0	14.0	15.2	13.7	15.0
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	442	540	1006	552	0	458	1196	1109	1165	109	750	335
V/C Ratio(X)	0.88	0.03	0.47	0.09	0.00	0.03	0.84	0.47	0.47	0.06	0.77	0.82
Avail Cap(c_a), veh/h	442	540	1006	552	0	458	1196	1109	1165	109	750	335
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)	0.97	0.97	0.97	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.7	23.0	8.5	23.4	0.0	23.0	27.1	9.0	9.0	40.7	33.4	33.9
Incr Delay (d2), s/veh	17.9	0.0	0.3	0.1	0.0	0.0	5.5	1.4	1.4	1.1	7.4	20.2
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(95%),veh/ln	15.8	0.5	7.6	1.4	0.0	0.4	15.7	9.0	9.3	0.3	10.8	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.7	23.0	8.9	23.5	0.0	23.0	32.6	10.4	10.4	41.8	40.8	54.1
LnGrp LOS	D	C	A	C	A	C	C	B	B	D	D	D
Approach Vol, veh/h		878			64			2071			859	
Approach Delay, s/veh		28.2			23.3			21.2			45.1	
Approach LOS		C			C			C			D	

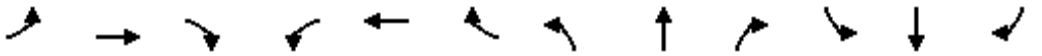
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		62.1		32.0	37.1	25.0		32.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		52.0		26.0	28.0	* 19		26.0				
Max Q Clear Time (g_c+I1), s		16.0		28.0	26.1	17.2		3.8				
Green Ext Time (p_c), s		8.7		0.0	0.9	0.9		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	16	423	5	40	13	904	955	5	6	518	248
Future Volume (veh/h)	351	16	423	5	40	13	904	955	5	6	518	248
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	390	18	0	6	44	14	1004	1061	6	7	576	276
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	561		75	506	476	1094	2174	12	96	829	370
Arrive On Green	0.30	0.30	0.00	0.30	0.30	0.30	0.32	0.60	0.60	0.23	0.23	0.23
Sat Flow, veh/h	1345	1870	1585	137	1687	1585	3456	3623	20	529	3554	1585
Grp Volume(v), veh/h	390	18	0	50	0	14	1004	520	547	7	576	276
Grp Sat Flow(s),veh/h/ln	1345	1870	1585	1824	0	1585	1728	1777	1867	529	1777	1585
Q Serve(g_s), s	33.7	0.8	0.0	0.0	0.0	0.7	33.6	19.9	19.9	1.5	17.8	19.4
Cycle Q Clear(g_c), s	36.0	0.8	0.0	2.3	0.0	0.7	33.6	19.9	19.9	21.4	17.8	19.4
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	438	561		581	0	476	1094	1066	1120	96	829	370
V/C Ratio(X)	0.89	0.03		0.09	0.00	0.03	0.92	0.49	0.49	0.07	0.69	0.75
Avail Cap(c_a), veh/h	438	561		581	0	476	1123	1066	1120	96	829	370
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)	0.97	0.97	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	29.7	0.0	30.2	0.0	29.7	39.5	13.6	13.6	52.9	42.1	42.7
Incr Delay (d2), s/veh	19.4	0.0	0.0	0.1	0.0	0.0	11.6	1.6	1.5	1.5	4.8	12.9
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(95%),veh/ln	19.8	0.7	0.0	1.9	0.0	0.5	22.4	12.8	13.3	0.4	13.1	13.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	29.7	0.0	30.3	0.0	29.7	51.1	15.2	15.1	54.3	46.9	55.6
LnGrp LOS	E	C		C	A	C	D	B	B	D	D	E
Approach Vol, veh/h		408	A		64			2071			859	
Approach Delay, s/veh		61.6			30.1			32.6			49.7	
Approach LOS		E			C			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		78.0		42.0	44.0	34.0		42.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		72.0		36.0	39.0	* 28		36.0				
Max Q Clear Time (g_c+I1), s		21.9		38.0	35.6	23.4		4.3				
Green Ext Time (p_c), s		9.1		0.0	1.5	2.1		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	40.3	
HCM 6th LOS	D	

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.8

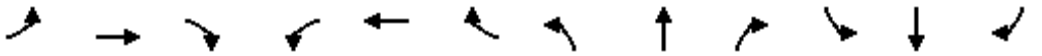
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1623	281	140	2213	0	76
Future Vol, veh/h	1623	281	140	2213	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	1803	312	156	2459	0	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2115	0	-	902
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	412	-	0	*545
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	412	-	-	*545
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	545	-	-	412	-
HCM Lane V/C Ratio	0.155	-	-	0.378	-
HCM Control Delay (s)	12.8	-	-	18.9	-
HCM Lane LOS	B	-	-	C	-
HCM 95th %tile Q(veh)	0.5	-	-	1.7	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1	68	34	1	78	84	1231	31	92	629	130
Future Volume (veh/h)	195	1	68	34	1	78	84	1231	31	92	629	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	1	76	38	1	87	93	1368	34	102	699	144
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	377	312	264	205	130	174	509	2055	51	253	2062	920
Arrive On Green	0.13	0.17	0.17	0.03	0.07	0.07	0.04	0.58	0.58	0.08	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3543	88	1781	3554	1585
Grp Volume(v), veh/h	217	1	76	38	1	87	93	685	717	102	699	144
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1855	1781	1777	1585
Q Serve(g_s), s	13.1	0.1	5.0	2.4	0.1	6.2	2.5	31.7	31.8	2.8	0.0	0.0
Cycle Q Clear(g_c), s	13.1	0.1	5.0	2.4	0.1	6.2	2.5	31.7	31.8	2.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	377	312	264	205	130	174	509	1030	1075	253	2062	920
V/C Ratio(X)	0.58	0.00	0.29	0.19	0.01	0.50	0.18	0.67	0.67	0.40	0.34	0.16
Avail Cap(c_a), veh/h	417	468	396	241	281	302	528	1030	1075	344	2062	920
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	42.3	41.7	43.8	49.7	52.0	50.3	9.2	17.2	17.3	14.2	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.6	0.4	0.0	2.2	0.2	3.4	3.3	1.0	0.4	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(95%),veh/ln	9.9	0.0	3.7	1.9	0.1	4.6	1.7	19.1	19.8	1.9	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	41.7	44.4	50.2	52.0	52.5	9.3	20.6	20.5	15.2	0.4	0.3
LnGrp LOS	D	D	D	D	D	D	A	C	C	B	A	A
Approach Vol, veh/h		294			126			1495			945	
Approach Delay, s/veh		44.0			51.8			19.9			2.0	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	75.6	8.6	26.0	9.8	75.6	20.3	14.3
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	11.0	51.0	6.0	30.0	6.0	56.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	4.8	33.8	4.4	7.0	4.5	2.0	15.1	8.2
Green Ext Time (p_c), s	0.1	9.0	0.0	0.2	0.0	6.1	0.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

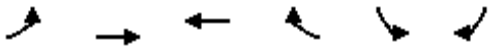
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	1175	83	46	1367
Future Vol, veh/h	0	22	1175	83	46	1367
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	24	1306	92	51	1519

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	653	0	0	1398	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	410	-	-	495	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	410	-	-	495	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.4
HCM LOS	B		

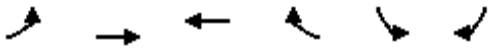
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	410	495	-
HCM Lane V/C Ratio	-	-	0.06	0.103	-
HCM Control Delay (s)	-	-	14.3	13.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	1132	1416	12	27	193
Future Volume (veh/h)	82	1132	1416	12	27	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870	1841	1885
Adj Flow Rate, veh/h	86	1192	1686	14	30	217
Peak Hour Factor	0.95	0.95	0.84	0.84	0.89	0.89
Percent Heavy Veh, %	2	5	2	2	4	1
Cap, veh/h	233	2351	2047	17	351	320
Arrive On Green	0.06	0.68	0.57	0.57	0.20	0.20
Sat Flow, veh/h	1781	3561	3705	30	1753	1598
Grp Volume(v), veh/h	86	1192	829	871	30	217
Grp Sat Flow(s),veh/h/ln	1781	1735	1777	1865	1753	1598
Q Serve(g_s), s	1.6	15.2	34.1	34.2	1.3	11.3
Cycle Q Clear(g_c), s	1.6	15.2	34.1	34.2	1.3	11.3
Prop In Lane	1.00			0.02	1.00	1.00
Lane Grp Cap(c), veh/h	233	2351	1007	1057	351	320
V/C Ratio(X)	0.37	0.51	0.82	0.82	0.09	0.68
Avail Cap(c_a), veh/h	490	2351	1007	1057	351	320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.53	0.53	1.00	1.00
Uniform Delay (d), s/veh	16.3	7.1	15.8	15.9	29.3	33.3
Incr Delay (d2), s/veh	1.0	0.8	4.2	4.0	0.5	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	7.7	16.7	17.4	1.0	16.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.3	7.9	20.0	19.9	29.8	44.4
LnGrp LOS	B	A	C	B	C	D
Approach Vol, veh/h		1278	1700		247	
Approach Delay, s/veh		8.5	20.0		42.6	
Approach LOS		A	B		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.0		23.0	10.0	57.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		61.0		18.0	18.0	38.0
Max Q Clear Time (g_c+I1), s		17.2		13.3	3.6	36.2
Green Ext Time (p_c), s		10.4		0.3	0.1	1.5

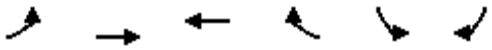
Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	234	925	1183	434	320	245
Future Volume (veh/h)	234	925	1183	434	320	245
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	1028	1314	482	356	272
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	298	2211	1659	740	455	405
Arrive On Green	0.10	0.62	0.47	0.47	0.26	0.26
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	260	1028	1314	482	356	272
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	6.7	13.8	28.2	21.0	16.7	13.9
Cycle Q Clear(g_c), s	6.7	13.8	28.2	21.0	16.7	13.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	298	2211	1659	740	455	405
V/C Ratio(X)	0.87	0.46	0.79	0.65	0.78	0.67
Avail Cap(c_a), veh/h	378	2211	1659	740	455	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.7	9.0	20.3	18.4	31.2	30.1
Incr Delay (d2), s/veh	14.4	0.6	4.0	4.4	12.6	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	7.6	16.6	12.2	13.4	18.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.1	9.6	24.3	22.8	43.7	38.7
LnGrp LOS	C	A	C	C	D	D
Approach Vol, veh/h		1288	1796		628	
Approach Delay, s/veh		14.6	23.9		41.6	
Approach LOS		B	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		62.0		28.0	14.0	48.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		56.0		23.0	13.0	38.0
Max Q Clear Time (g_c+I1), s		15.8		18.7	8.7	30.2
Green Ext Time (p_c), s		8.2		1.0	0.3	5.6

Intersection Summary		
HCM 6th Ctrl Delay	23.6	
HCM 6th LOS	C	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	234	925	1183	434	320	245
Future Volume (veh/h)	234	925	1183	434	320	245
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	1028	1314	482	356	272
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	291	2280	1781	794	475	423
Arrive On Green	0.10	0.64	0.50	0.50	0.27	0.27
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	260	1028	1314	482	356	272
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	9.4	17.5	35.1	26.2	22.0	18.2
Cycle Q Clear(g_c), s	9.4	17.5	35.1	26.2	22.0	18.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	291	2280	1781	794	475	423
V/C Ratio(X)	0.89	0.45	0.74	0.61	0.75	0.64
Avail Cap(c_a), veh/h	397	2280	1781	794	475	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	10.8	23.7	21.5	40.3	39.0
Incr Delay (d2), s/veh	15.6	0.6	2.8	3.4	10.4	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	10.0	20.5	14.9	16.4	23.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.5	11.4	26.5	24.9	50.7	46.3
LnGrp LOS	D	B	C	C	D	D
Approach Vol, veh/h		1288	1796		628	
Approach Delay, s/veh		17.9	26.0		48.8	
Approach LOS		B	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		83.0		37.0	16.9	66.1
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		77.0		32.0	19.0	53.0
Max Q Clear Time (g_c+I1), s		19.5		24.0	11.4	37.1
Green Ext Time (p_c), s		8.5		1.4	0.4	9.5

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	50	204	1120	16	67	651
Future Vol, veh/h	50	204	1120	16	67	651
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	222	1217	17	73	708

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1717	609	0	0	1234	0
Stage 1	1217	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	81	438	-	-	560	-
Stage 1	243	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	70	438	-	-	560	-
Mov Cap-2 Maneuver	70	-	-	-	-	-
Stage 1	243	-	-	-	-	-
Stage 2	500	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	46.5	0	1.2
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	70	438	560	-
HCM Lane V/C Ratio	-	-	0.776	0.506	0.13	-
HCM Control Delay (s)	-	-	149.3	21.3	12.4	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	3.6	2.8	0.4	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	204	1120	16	67	651
Future Volume (veh/h)	50	204	1120	16	67	651
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	222	1217	17	73	708
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	291	259	2176	971	348	2539
Arrive On Green	0.16	0.16	0.61	0.61	0.05	0.71
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	54	222	1217	17	73	708
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.4	12.3	18.2	0.4	1.2	6.4
Cycle Q Clear(g_c), s	2.4	12.3	18.2	0.4	1.2	6.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	291	259	2176	971	348	2539
V/C Ratio(X)	0.19	0.86	0.56	0.02	0.21	0.28
Avail Cap(c_a), veh/h	396	352	2176	971	404	2539
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	32.5	36.6	10.3	6.8	7.5	4.6
Incr Delay (d2), s/veh	0.3	14.4	1.0	0.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	9.6	10.8	0.2	0.7	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.8	51.0	11.3	6.9	7.8	4.9
LnGrp LOS	C	D	B	A	A	A
Approach Vol, veh/h	276		1234			781
Approach Delay, s/veh	47.5		11.3			5.1
Approach LOS	D		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	9.2	61.1			70.3	19.7
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	7.0	47.0			59.0	20.0
Max Q Clear Time (g_c+I1), s	3.2	20.2			8.4	14.3
Green Ext Time (p_c), s	0.0	10.7			5.9	0.4

Intersection Summary			
HCM 6th Ctrl Delay		13.5	
HCM 6th LOS		B	

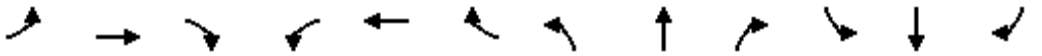
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	5	4	17	5	71	1	858	6	23	605	13
Future Vol, veh/h	38	5	4	17	5	71	1	858	6	23	605	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	5	4	18	5	77	1	933	7	25	658	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1186	1657	336	1321	1661	470	672	0	0	940	0	0
Stage 1	715	715	-	939	939	-	-	-	-	-	-	-
Stage 2	471	942	-	382	722	-	-	-	-	-	-	-
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	144	97	660	115	96	540	915	-	-	725	-	-
Stage 1	388	433	-	284	341	-	-	-	-	-	-	-
Stage 2	542	340	-	612	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	115	94	660	106	93	540	915	-	-	725	-	-
Mov Cap-2 Maneuver	115	94	-	106	93	-	-	-	-	-	-	-
Stage 1	388	418	-	284	341	-	-	-	-	-	-	-
Stage 2	457	340	-	579	414	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	54.9	26.2	0	0.4
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	915	-	-	121	269	725	-	-
HCM Lane V/C Ratio	0.001	-	-	0.422	0.376	0.034	-	-
HCM Control Delay (s)	8.9	-	-	54.9	26.2	10.1	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	1.7	0.1	-	-



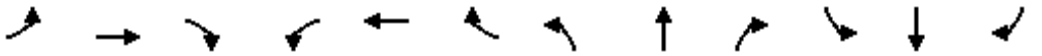
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	836	332	730	1418	23	610	26	642	128	43	66
Future Volume (veh/h)	51	836	332	730	1418	23	610	26	642	128	43	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1841	1737	1856	1737	1856	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	54	889	353	793	1541	25	670	29	0	162	54	84
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.91	0.91	0.91	0.79	0.79	0.79
Percent Heavy Veh, %	4	1	4	11	3	11	3	0	5	0	0	0
Cap, veh/h	147	968	747	864	1780	743	714	340		334	130	167
Arrive On Green	0.03	0.27	0.27	0.09	0.17	0.17	0.21	0.18	0.00	0.10	0.07	0.07
Sat Flow, veh/h	1753	3582	1560	3209	3526	1472	3428	1900	1547	1810	1900	1610
Grp Volume(v), veh/h	54	889	353	793	1541	25	670	29	0	162	54	84
Grp Sat Flow(s),veh/h/ln	1753	1791	1560	1605	1763	1472	1714	1900	1547	1810	1900	1610
Q Serve(g_s), s	2.7	28.9	18.3	29.4	51.1	1.7	23.1	1.5	0.0	9.8	3.3	5.9
Cycle Q Clear(g_c), s	2.7	28.9	18.3	29.4	51.1	1.7	23.1	1.5	0.0	9.8	3.3	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	968	747	864	1780	743	714	340		334	130	167
V/C Ratio(X)	0.37	0.92	0.47	0.92	0.87	0.03	0.94	0.09		0.49	0.41	0.50
Avail Cap(c_a), veh/h	188	968	747	909	1780	743	714	491		337	285	298
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.29	0.29	0.29	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	42.5	21.1	53.3	46.0	25.5	46.7	41.1	0.0	45.7	53.6	50.9
Incr Delay (d2), s/veh	1.5	14.9	2.1	4.8	1.8	0.0	20.0	0.1	0.0	1.1	2.1	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(95%),veh/ln	2.1	20.6	11.4	16.4	28.9	1.1	17.4	1.3	0.0	8.0	3.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	57.4	23.2	58.1	47.9	25.5	66.8	41.2	0.0	46.8	55.7	53.2
LnGrp LOS	C	E	C	E	D	C	E	D		D	E	D
Approach Vol, veh/h		1296			2359			699	A		300	
Approach Delay, s/veh		47.1			51.1			65.7			50.2	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.3	38.4	16.8	27.5	9.2	66.6	30.0	14.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	34.0	21.0	12.0	31.0	7.0	48.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	31.4	30.9	11.8	3.5	4.7	53.1	25.1	7.9
Green Ext Time (p_c), s	0.9	0.0	0.0	0.1	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



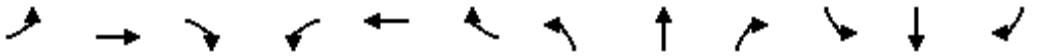
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1487	110	394	1945	32	118	8	269	28	18	28
Future Volume (veh/h)	32	1487	110	394	1945	32	118	8	269	28	18	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1870	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	35	1634	121	443	2185	36	131	9	299	33	21	33
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	3	2	2	0	0	1	0	0	0
Cap, veh/h	180	1658	740	539	2528	42	224	12	757	64	45	41
Arrive On Green	0.06	0.93	0.93	0.52	1.00	1.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1767	3578	59	778	55	1598	108	209	194
Grp Volume(v), veh/h	35	1634	121	443	1082	1139	140	0	299	87	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1767	1777	1860	833	0	1598	511	0	0
Q Serve(g_s), s	1.3	45.8	0.7	18.2	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0
Cycle Q Clear(g_c), s	1.3	45.8	0.7	18.2	0.0	0.0	20.5	0.0	0.0	23.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	0.94		1.00	0.38		0.38
Lane Grp Cap(c), veh/h	180	1658	740	539	1255	1314	236	0	757	150	0	0
V/C Ratio(X)	0.19	0.99	0.16	0.82	0.86	0.87	0.59	0.00	0.39	0.58	0.00	0.00
Avail Cap(c_a), veh/h	233	1658	740	539	1255	1314	240	0	762	155	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.15	0.15	0.15	0.58	0.58	0.58	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	3.7	2.2	23.9	0.0	0.0	45.1	0.0	20.4	45.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	5.8	0.1	6.0	4.8	4.8	3.8	0.0	0.3	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	4.0	0.4	11.2	3.0	3.1	7.6	0.0	9.3	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	9.5	2.2	29.9	4.8	4.8	48.9	0.0	20.8	50.1	0.0	0.0
LnGrp LOS	B	A	A	C	A	A	D	A	C	D	A	A
Approach Vol, veh/h		1790			2664			439			87	
Approach Delay, s/veh		9.2			9.0			29.7			50.1	
Approach LOS		A			A			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.2	62.0		31.6	8.4	90.8		31.6				
Change Period (Y+Rc), s	6.0	* 6		6.0	5.0	6.0		6.0				
Max Green Setting (Gmax), s	21.0	* 56		26.0	7.0	70.0		26.0				
Max Q Clear Time (g_c+I1), s	20.2	47.8		22.5	3.3	2.0		25.6				
Green Ext Time (p_c), s	0.1	6.5		0.7	0.0	38.8		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		11.6
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



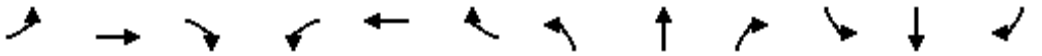
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1637	95	322	2268	16	115	14	260	193	14	52
Future Volume (veh/h)	34	1637	95	322	2268	16	115	14	260	193	14	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1856	1826	1826	1826	1159	1841	1811	1767	1900
Adj Flow Rate, veh/h	37	1779	103	362	2548	18	121	15	274	238	17	64
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.95	0.95	0.95	0.81	0.81	0.81
Percent Heavy Veh, %	0	1	1	3	5	5	5	50	4	6	9	0
Cap, veh/h	168	2178	126	385	2828	20	352	145	422	367	279	302
Arrive On Green	0.06	0.88	0.88	0.29	1.00	1.00	0.08	0.13	0.13	0.11	0.16	0.16
Sat Flow, veh/h	1810	4977	288	1767	5107	36	1739	1159	1560	1725	1767	1610
Grp Volume(v), veh/h	37	1226	656	362	1657	909	121	15	274	238	17	64
Grp Sat Flow(s),veh/h/ln	1810	1716	1833	1767	1662	1819	1739	1159	1560	1725	1767	1610
Q Serve(g_s), s	1.3	18.7	18.8	14.9	0.0	0.0	7.2	1.4	15.0	13.0	1.0	4.0
Cycle Q Clear(g_c), s	1.3	18.7	18.8	14.9	0.0	0.0	7.2	1.4	15.0	13.0	1.0	4.0
Prop In Lane	1.00		0.16	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	1502	803	385	1840	1008	352	145	422	367	279	302
V/C Ratio(X)	0.22	0.82	0.82	0.94	0.90	0.90	0.34	0.10	0.65	0.65	0.06	0.21
Avail Cap(c_a), veh/h	190	1502	803	466	1840	1008	380	145	422	367	279	302
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	5.4	5.4	19.0	0.0	0.0	41.2	46.5	38.7	40.4	43.0	41.3
Incr Delay (d2), s/veh	0.3	2.5	4.7	15.8	4.2	7.3	0.6	0.3	3.5	4.0	0.1	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(95%),veh/ln	1.0	4.7	5.6	8.5	1.9	3.7	5.7	0.7	12.0	10.8	0.8	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	7.9	10.0	34.8	4.2	7.3	41.8	46.8	42.2	44.4	43.1	41.6
LnGrp LOS	B	A	B	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1919			2928			410			319	
Approach Delay, s/veh		8.8			9.0			42.2			43.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	58.5	14.1	24.9	8.5	72.5	18.0	21.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	23.0	47.0	11.0	17.0	5.0	65.0	13.0	15.0
Max Q Clear Time (g_c+I1), s	16.9	20.8	9.2	6.0	3.3	2.0	15.0	17.0
Green Ext Time (p_c), s	0.6	15.2	0.0	0.1	0.0	39.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1365	725	213	1556	0	0	0	0	1097	54	1026
Future Volume (veh/h)	0	1365	725	213	1556	0	0	0	0	1097	54	1026
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1856	1885	1841	0				1618	1900	1796
Adj Flow Rate, veh/h	0	1606	0	234	1710	0				1262	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	3	1	4	0				19	0	7
Cap, veh/h	0	1642		374	2154	0				1353	0	
Arrive On Green	0.00	0.92	0.00	0.11	0.62	0.00				0.29	0.00	0.00
Sat Flow, veh/h	0	3676	1572	3483	3589	0				4624	0	1522
Grp Volume(v), veh/h	0	1606	0	234	1710	0				1262	0	0
Grp Sat Flow(s),veh/h/ln	0	1791	1572	1742	1749	0				1541	0	1522
Q Serve(g_s), s	0.0	43.4	0.0	7.7	44.1	0.0				31.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	43.4	0.0	7.7	44.1	0.0				31.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1642		374	2154	0				1353	0	
V/C Ratio(X)	0.00	0.98		0.63	0.79	0.00				0.93	0.00	
Avail Cap(c_a), veh/h	0	1642		377	2154	0				1387	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.59	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.5	0.0	51.2	17.3	0.0				41.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	12.7	0.0	3.2	3.1	0.0				11.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	7.6	0.0	6.3	23.5	0.0				19.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.2	0.0	54.4	20.5	0.0				52.8	0.0	0.0
LnGrp LOS	A	B		D	C	A				D	A	
Approach Vol, veh/h		1606	A		1944						1262	A
Approach Delay, s/veh		17.2			24.5						52.8	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.9	61.0		40.1		79.9						
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0						
Max Green Setting (Gmax), s	13.0	* 55		36.0		73.0						
Max Q Clear Time (g_c+I1), s	9.7	45.4		33.9		46.1						
Green Ext Time (p_c), s	0.2	6.9		1.2		15.3						

Intersection Summary												
HCM 6th Ctrl Delay			29.5									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

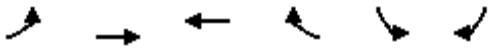
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2036	426	0	2102	745	243
Future Volume (veh/h)	2036	426	0	2102	745	243
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1900	0	1870	1841	1826
Adj Flow Rate, veh/h	2166	0	0	2285	866	0
Peak Hour Factor	0.94	0.94	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	3	0	0	2	4	5
Cap, veh/h	3176		0	3201	957	
Arrive On Green	0.63	0.00	0.00	1.00	0.28	0.00
Sat Flow, veh/h	5233	1610	0	5443	3401	2723
Grp Volume(v), veh/h	2166	0	0	2285	866	0
Grp Sat Flow(s),veh/h/ln	1689	1610	0	1702	1700	1362
Q Serve(g_s), s	33.4	0.0	0.0	0.0	29.5	0.0
Cycle Q Clear(g_c), s	33.4	0.0	0.0	0.0	29.5	0.0
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	3176		0	3201	957	
V/C Ratio(X)	0.68		0.00	0.71	0.90	
Avail Cap(c_a), veh/h	3176		0	3201	1134	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.67	1.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	0.0	0.0	41.6	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.9	9.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.5	0.0	0.0	0.5	19.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.8	0.0	0.0	0.9	50.8	0.0
LnGrp LOS	B		A	A	D	
Approach Vol, veh/h	2166	A		2285	866	A
Approach Delay, s/veh	15.8			0.9	50.8	
Approach LOS	B			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	81.2				81.2	38.8
Change Period (Y+Rc), s	6.0				6.0	5.0
Max Green Setting (Gmax), s	69.0				69.0	40.0
Max Q Clear Time (g_c+I1), s	35.4				2.0	31.5
Green Ext Time (p_c), s	22.1				35.8	2.3

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



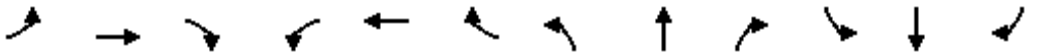
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	2158	1891	171	190	211
Future Volume (veh/h)	121	2158	1891	171	190	211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	142	2539	2125	0	250	0
Peak Hour Factor	0.85	0.85	0.89	0.89	0.76	0.76
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	202	3643	3191		332	
Arrive On Green	0.12	1.00	0.62	0.00	0.18	0.00
Sat Flow, veh/h	3456	5191	5274	1434	1810	1560
Grp Volume(v), veh/h	142	2539	2125	0	250	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1702	1434	1810	1560
Q Serve(g_s), s	4.7	0.0	32.1	0.0	15.7	0.0
Cycle Q Clear(g_c), s	4.7	0.0	32.1	0.0	15.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	202	3643	3191		332	
V/C Ratio(X)	0.70	0.70	0.67		0.75	
Avail Cap(c_a), veh/h	576	3643	3191		332	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	14.5	0.0	46.4	0.0
Incr Delay (d2), s/veh	3.1	0.8	1.1	0.0	14.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.5	17.0	0.0	13.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.1	0.8	15.6	0.0	61.1	0.0
LnGrp LOS	E	A	B		E	
Approach Vol, veh/h		2681	2125	A	250	A
Approach Delay, s/veh		3.7	15.6		61.1	
Approach LOS		A	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.0		27.0	12.0	81.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		87.0		22.0	20.0	62.0
Max Q Clear Time (g_c+I1), s		2.0		17.7	6.7	34.1
Green Ext Time (p_c), s		49.7		0.3	0.3	19.1

Intersection Summary	
HCM 6th Ctrl Delay	11.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	796	625	490	635	0	0	0	0	772	5	825
Future Volume (veh/h)	0	796	625	490	635	0	0	0	0	772	5	825
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1856	1530	1856
Adj Flow Rate, veh/h	0	875	0	551	713	0				867	6	927
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				3	25	3
Cap, veh/h	0	881		1390	2199	0				651	5	1245
Arrive On Green	0.00	0.25	0.00	0.13	0.23	0.00				0.45	0.45	0.45
Sat Flow, veh/h	0	3618	1610	3510	3243	0				1447	10	2768
Grp Volume(v), veh/h	0	875	0	551	713	0				873	0	927
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1457	0	1384
Q Serve(g_s), s	0.0	29.7	0.0	17.3	22.5	0.0				54.0	0.0	33.2
Cycle Q Clear(g_c), s	0.0	29.7	0.0	17.3	22.5	0.0				54.0	0.0	33.2
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	881		1390	2199	0				656	0	1245
V/C Ratio(X)	0.00	0.99		0.40	0.32	0.00				1.33	0.00	0.74
Avail Cap(c_a), veh/h	0	881		1390	2199	0				656	0	1245
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.67	0.67	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	44.9	0.0	39.0	22.7	0.0				33.0	0.0	27.3
Incr Delay (d2), s/veh	0.0	28.6	0.0	0.1	0.3	0.0				159.4	0.0	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
%ile BackOfQ(95%),veh/ln	0.0	22.8	0.0	12.0	13.7	0.0				69.6	0.0	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	73.5	0.0	39.1	23.0	0.0				192.4	0.0	31.4
LnGrp LOS	A	E		D	C	A				F	A	C
Approach Vol, veh/h		875	A		1264						1800	
Approach Delay, s/veh		73.5			30.0						109.5	
Approach LOS		E			C						F	

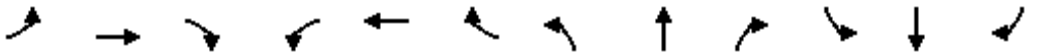
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	54.0	36.0		59.0		90.0
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	20.0	* 30		54.0		55.0
Max Q Clear Time (g_c+I1), s	19.3	31.7		56.0		24.5
Green Ext Time (p_c), s	0.2	0.0		0.0		5.4

Intersection Summary		
HCM 6th Ctrl Delay		76.0
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	796	625	490	635	0	0	0	0	772	5	825
Future Volume (veh/h)	0	796	625	490	635	0	0	0	0	772	5	825
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1781	1530	1856
Adj Flow Rate, veh/h	0	875	0	551	713	0				871	0	927
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				8	25	3
Cap, veh/h	0	1028		1521	2449	0				1414	0	1310
Arrive On Green	0.00	0.29	0.00	0.14	0.26	0.00				0.42	0.00	0.42
Sat Flow, veh/h	0	3618	1610	3510	3243	0				3393	0	3145
Grp Volume(v), veh/h	0	875	0	551	713	0				871	0	927
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1697	0	1572
Q Serve(g_s), s	0.0	28.1	0.0	17.0	21.8	0.0				24.2	0.0	29.3
Cycle Q Clear(g_c), s	0.0	28.1	0.0	17.0	21.8	0.0				24.2	0.0	29.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1028		1521	2449	0				1414	0	1310
V/C Ratio(X)	0.00	0.85		0.36	0.29	0.00				0.62	0.00	0.71
Avail Cap(c_a), veh/h	0	1028		1521	2449	0				1414	0	1310
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.56	0.56	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	40.0	0.0	36.4	18.2	0.0				27.5	0.0	28.9
Incr Delay (d2), s/veh	0.0	8.8	0.0	0.1	0.2	0.0				2.0	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	19.1	0.0	11.5	12.9	0.0				14.8	0.0	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	48.9	0.0	36.5	18.3	0.0				29.5	0.0	32.2
LnGrp LOS	A	D		D	B	A				C	A	C
Approach Vol, veh/h		875	A		1264						1798	
Approach Delay, s/veh		48.9			26.3						30.9	
Approach LOS		D			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	59.0	41.0		55.0		100.0
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	19.0	* 35		50.0		59.0
Max Q Clear Time (g_c+I1), s	19.0	30.1		31.3		23.8
Green Ext Time (p_c), s	0.0	2.5		7.7		5.5

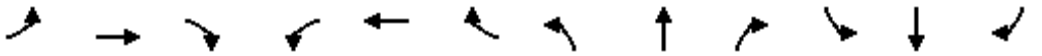
Intersection Summary		
HCM 6th Ctrl Delay		33.4
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	798	0	0	505	467	620	5	476	0	0	0
Future Volume (veh/h)	770	798	0	0	505	467	620	5	476	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	828	858	0	0	594	549	769	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	914	2045	0	0	1113	496	881	0				
Arrive On Green	0.09	0.21	0.00	0.00	0.31	0.31	0.28	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	828	858	0	0	594	549	769	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	28.7	27.3	0.0	0.0	16.3	37.0	28.2	0.0	0.0			
Cycle Q Clear(g_c), s	28.7	27.3	0.0	0.0	16.3	37.0	28.2	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	914	2045	0	0	1113	496	881	0				
V/C Ratio(X)	0.91	0.42	0.00	0.00	0.53	1.11	0.87	0.00				
Avail Cap(c_a), veh/h	943	2045	0	0	1113	496	881	0				
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.52	0.52	1.00	0.00	0.00			
Uniform Delay (d), s/veh	53.2	28.7	0.0	0.0	34.4	41.5	40.9	0.0	0.0			
Incr Delay (d2), s/veh	1.3	0.1	0.0	0.0	1.0	62.6	11.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	15.2	13.7	0.0	0.0	10.4	30.6	17.4	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.6	28.8	0.0	0.0	35.3	104.1	52.6	0.0	0.0			
LnGrp LOS	D	C	A	A	D	F	D	A				
Approach Vol, veh/h		1686			1143			769	A			
Approach Delay, s/veh		41.4			68.4			52.6				
Approach LOS		D			E			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		81.0			38.0	43.0		39.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		75.0			33.0	* 37		34.0				
Max Q Clear Time (g_c+I1), s		29.3			30.7	39.0		30.2				
Green Ext Time (p_c), s		7.2			0.9	0.0		1.2				

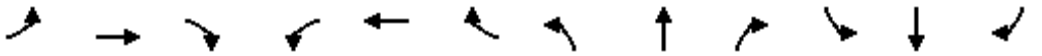
Intersection Summary	
HCM 6th Ctrl Delay	52.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	798	0	0	505	467	620	5	476	0	0	0
Future Volume (veh/h)	770	798	0	0	505	467	620	5	476	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	828	858	0	0	594	0	769	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	1086	1963	0	0	842		959	0				
Arrive On Green	0.21	0.40	0.00	0.00	0.23	0.00	0.31	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	828	858	0	0	594	0	769	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	27.2	22.8	0.0	0.0	18.1	0.0	27.3	0.0	0.0			
Cycle Q Clear(g_c), s	27.2	22.8	0.0	0.0	18.1	0.0	27.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1086	1963	0	0	842		959	0				
V/C Ratio(X)	0.76	0.44	0.00	0.00	0.71		0.80	0.00				
Avail Cap(c_a), veh/h	1114	1963	0	0	842		959	0				
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.52	0.52	0.00	0.00	0.67	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	43.0	21.2	0.0	0.0	42.2	0.0	38.1	0.0	0.0			
Incr Delay (d2), s/veh	1.6	0.4	0.0	0.0	3.3	0.0	7.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	16.3	13.0	0.0	0.0	12.3	0.0	16.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	21.5	0.0	0.0	45.6	0.0	45.2	0.0	0.0			
LnGrp LOS	D	C	A	A	D		D	A				
Approach Vol, veh/h		1686			594	A		769	A			
Approach Delay, s/veh		32.9			45.6			45.2				
Approach LOS		C			D			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.0			44.0	34.0		42.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		72.0			39.0	* 28		37.0				
Max Q Clear Time (g_c+I1), s		24.8			29.2	20.1		29.3				
Green Ext Time (p_c), s		7.2			2.4	2.3		1.9				

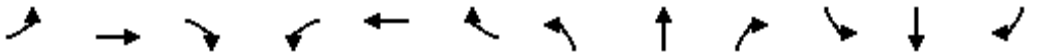
Intersection Summary	
HCM 6th Ctrl Delay	38.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1193	1104	626	601	43	1381	201	399	104	216	204
Future Volume (veh/h)	121	1193	1104	626	601	43	1381	201	399	104	216	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	1326	0	696	668	47	1534	218	0	113	235	222
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	188	1340		1287	2861	200	1549	691		144	265	311
Arrive On Green	0.02	0.09	0.00	0.37	0.59	0.59	0.51	0.62	0.00	0.08	0.14	0.14
Sat Flow, veh/h	3456	5025	1610	3510	4872	341	5023	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	132	1326	0	696	465	250	1534	218	0	113	235	222
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1809	1674	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.6	31.6	0.0	18.8	7.8	7.9	36.3	6.7	0.0	7.5	14.8	15.7
Cycle Q Clear(g_c), s	4.6	31.6	0.0	18.8	7.8	7.9	36.3	6.7	0.0	7.5	14.8	15.7
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1340		1287	1999	1062	1549	691		144	265	311
V/C Ratio(X)	0.70	0.99		0.54	0.23	0.23	0.99	0.32		0.79	0.89	0.71
Avail Cap(c_a), veh/h	230	1340		1287	1999	1062	1549	691		371	265	311
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.19	0.19	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	54.6	0.0	30.0	11.8	11.9	28.9	15.8	0.0	54.1	50.6	45.1
Incr Delay (d2), s/veh	7.1	22.2	0.0	0.5	0.3	0.5	7.9	0.0	0.0	9.0	28.2	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(95%),veh/ln	4.0	23.7	0.0	12.4	5.2	5.7	15.1	3.7	0.0	6.7	13.9	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	76.8	0.0	30.5	12.1	12.4	36.9	15.8	0.0	63.2	78.8	52.7
LnGrp LOS	E	E		C	B	B	D	B		E	E	D
Approach Vol, veh/h		1458	A		1411			1752	A		570	
Approach Delay, s/veh		75.7			21.2			34.2			65.5	
Approach LOS		E			C			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	38.0	43.0	23.0	11.5	77.5	15.7	50.3
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	* 32	37.0	17.0	8.0	35.0	25.0	29.0
Max Q Clear Time (g_c+I1), s	20.8	33.6	38.3	17.7	6.6	9.9	9.5	8.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.5	0.2	1.1

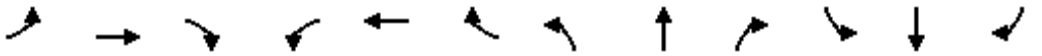
Intersection Summary	
HCM 6th Ctrl Delay	45.8
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



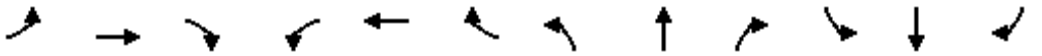
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	497	25	167	100	38	333	126	1151	69	383	1440	123
Future Volume (veh/h)	497	25	167	100	38	333	126	1151	69	383	1440	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	28	186	111	42	370	140	1279	77	426	1600	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	626	335	284	138	140	449	262	1199	72	431	1784	796
Arrive On Green	0.18	0.18	0.18	0.08	0.07	0.07	0.12	0.70	0.70	0.42	1.00	1.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3406	205	1781	3554	1585
Grp Volume(v), veh/h	552	28	186	111	42	370	140	666	690	426	1600	137
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1834	1781	1777	1585
Q Serve(g_s), s	18.7	1.5	13.1	7.4	2.5	9.0	6.2	42.3	42.3	24.3	0.0	0.0
Cycle Q Clear(g_c), s	18.7	1.5	13.1	7.4	2.5	9.0	6.2	42.3	42.3	24.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	626	335	284	138	140	449	262	626	646	431	1784	796
V/C Ratio(X)	0.88	0.08	0.66	0.81	0.30	0.82	0.53	1.06	1.07	0.99	0.90	0.17
Avail Cap(c_a), veh/h	749	335	284	252	140	449	262	626	646	431	1784	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75	0.09	0.09	0.09
Uniform Delay (d), s/veh	47.9	41.1	45.8	54.5	52.5	40.2	21.3	17.7	17.7	25.9	0.0	0.0
Incr Delay (d2), s/veh	10.5	0.1	5.4	10.6	1.2	11.8	1.6	49.9	50.6	10.4	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.8	1.3	9.5	6.7	2.2	17.2	4.4	23.1	23.9	11.8	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	41.2	51.2	65.0	53.7	52.0	22.9	67.7	68.3	36.4	0.8	0.0
LnGrp LOS	E	D	D	E	D	D	C	F	F	D	A	A
Approach Vol, veh/h		766			523			1496			2163	
Approach Delay, s/veh		56.0			54.9			63.8			7.7	
Approach LOS		E			D			E			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	48.3	14.3	27.5	12.0	66.3	26.7	15.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	38.0	17.0	18.0	7.0	56.0	26.0	9.0
Max Q Clear Time (g_c+I1), s	26.3	44.3	9.4	15.1	8.2	2.0	20.7	11.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.2	0.0	20.8	1.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	497	25	167	100	38	333	126	1151	69	383	1440	123
Future Volume (veh/h)	497	25	167	100	38	333	126	1151	69	383	1440	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	28	186	111	42	370	140	1279	77	426	1600	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	323	273	136	140	436	194	1306	583	427	1810	807
Arrive On Green	0.17	0.17	0.17	0.08	0.08	0.08	0.12	0.74	0.74	0.20	0.51	0.51
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	552	28	186	111	42	370	140	1279	77	426	1600	137
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	18.8	1.5	13.2	7.4	2.5	9.0	6.0	40.8	1.7	23.9	48.2	5.6
Cycle Q Clear(g_c), s	18.8	1.5	13.2	7.4	2.5	9.0	6.0	40.8	1.7	23.9	48.2	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	601	323	273	136	140	436	194	1306	583	427	1810	807
V/C Ratio(X)	0.92	0.09	0.68	0.81	0.30	0.85	0.72	0.98	0.13	1.00	0.88	0.17
Avail Cap(c_a), veh/h	605	323	273	178	140	436	194	1306	583	427	1810	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75	0.09	0.09	0.09
Uniform Delay (d), s/veh	48.7	41.7	46.6	54.6	52.5	41.1	26.4	15.4	10.3	37.6	26.3	15.8
Incr Delay (d2), s/veh	19.0	0.1	6.7	19.2	1.2	14.6	9.5	17.1	0.4	12.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.8	1.3	9.6	7.3	2.2	17.7	5.0	13.3	1.2	15.7	21.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	41.8	53.2	73.8	53.7	55.7	35.9	32.6	10.6	49.9	27.0	15.9
LnGrp LOS	E	D	D	E	D	E	D	C	B	D	C	B
Approach Vol, veh/h		766			523			1496			2163	
Approach Delay, s/veh		63.3			59.4			31.8			30.8	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	50.1	14.2	26.7	12.0	67.1	25.9	15.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	24.0	44.0	12.0	18.0	7.0	61.0	21.0	9.0
Max Q Clear Time (g_c+I1), s	25.9	42.8	9.4	15.2	8.0	50.2	20.8	11.0
Green Ext Time (p_c), s	0.0	0.9	0.1	0.2	0.0	7.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

Notes

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

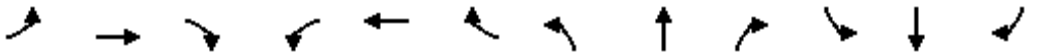
Intersection	
Int Delay, s/veh	1.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	133	1489	207	0	1270
Future Vol, veh/h	0	133	1489	207	0	1270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	148	1654	230	0	1411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	827	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	315	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	315	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.1	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	315	-
HCM Lane V/C Ratio	-	0.469	-
HCM Control Delay (s)	-	26.1	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	2.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	41	927	5	23	11	561	989	5	15	1347	333
Future Volume (veh/h)	236	41	927	5	23	11	561	989	5	15	1347	333
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	262	46	1030	6	26	12	623	1099	6	17	1497	370
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	459	540	1033	95	372	458	1253	2804	15	205	1224	546
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.36	0.77	0.77	0.34	0.34	0.34
Sat Flow, veh/h	1370	1870	1585	163	1288	1585	3456	3624	20	510	3554	1585
Grp Volume(v), veh/h	262	46	1030	32	0	12	623	539	566	17	1497	370
Grp Sat Flow(s),veh/h/ln	1370	1870	1585	1452	0	1585	1728	1777	1867	510	1777	1585
Q Serve(g_s), s	15.4	1.6	25.5	0.0	0.0	0.5	12.6	8.9	8.9	2.3	31.0	18.0
Cycle Q Clear(g_c), s	16.5	1.6	25.5	1.1	0.0	0.5	12.6	8.9	8.9	11.2	31.0	18.0
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	459	540	1033	467	0	458	1253	1375	1445	205	1224	546
V/C Ratio(X)	0.57	0.09	1.00	0.07	0.00	0.03	0.50	0.39	0.39	0.08	1.22	0.68
Avail Cap(c_a), veh/h	459	540	1033	467	0	458	1253	1375	1445	205	1224	546
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)	0.92	0.92	0.92	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	23.3	15.6	23.2	0.0	22.9	22.3	3.3	3.3	26.5	29.5	25.2
Incr Delay (d2), s/veh	1.6	0.1	26.2	0.1	0.0	0.0	0.3	0.8	0.8	0.8	107.9	6.6
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(95%),veh/ln	8.6	1.3	15.3	0.9	0.0	0.3	8.7	4.4	4.6	0.6	45.3	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	23.4	41.8	23.2	0.0	23.0	22.6	4.1	4.1	27.3	137.4	31.9
LnGrp LOS	C	C	D	C	A	C	C	A	A	C	F	C
Approach Vol, veh/h		1338			44			1728			1884	
Approach Delay, s/veh		39.0			23.1			10.8			115.6	
Approach LOS		D			C			B			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.7		32.0	38.7	37.0		32.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		52.0		26.0	16.0	* 31		26.0				
Max Q Clear Time (g_c+I1), s		10.9		27.5	14.6	33.0		3.1				
Green Ext Time (p_c), s		9.4		0.0	0.4	0.0		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			58.0									
HCM 6th LOS			E									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	41	927	5	23	11	561	989	5	15	1347	333
Future Volume (veh/h)	236	41	927	5	23	11	561	989	5	15	1347	333
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	262	46	0	6	26	12	623	1099	6	17	1497	370
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	374		79	314	317	691	2537	14	223	1599	713
Arrive On Green	0.20	0.20	0.00	0.20	0.20	0.20	0.20	0.70	0.70	0.45	0.45	0.45
Sat Flow, veh/h	1370	1870	1585	219	1569	1585	3456	3624	20	510	3554	1585
Grp Volume(v), veh/h	262	46	0	32	0	12	623	539	566	17	1497	370
Grp Sat Flow(s),veh/h/ln	1370	1870	1585	1788	0	1585	1728	1777	1867	510	1777	1585
Q Serve(g_s), s	22.3	2.4	0.0	0.0	0.0	0.7	21.1	15.7	15.7	2.8	48.0	20.1
Cycle Q Clear(g_c), s	24.0	2.4	0.0	1.7	0.0	0.7	21.1	15.7	15.7	18.5	48.0	20.1
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	315	374		393	0	317	691	1244	1307	223	1599	713
V/C Ratio(X)	0.83	0.12		0.08	0.00	0.04	0.90	0.43	0.43	0.08	0.94	0.52
Avail Cap(c_a), veh/h	315	374		393	0	317	720	1244	1307	223	1599	713
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)	0.91	0.91	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	39.4	0.0	39.1	0.0	38.7	46.8	7.8	7.8	28.7	31.4	23.7
Incr Delay (d2), s/veh	15.7	0.1	0.0	0.1	0.0	0.0	14.2	1.1	1.0	0.7	11.7	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.9	2.0	0.0	1.4	0.0	0.5	15.7	9.8	10.2	0.7	30.4	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	39.5	0.0	39.2	0.0	38.7	61.1	8.9	8.8	29.4	43.1	26.4
LnGrp LOS	E	D		D	A	D	E	A	A	C	D	C
Approach Vol, veh/h		308	A		44			1728			1884	
Approach Delay, s/veh		61.1			39.0			27.7			39.7	
Approach LOS		E			D			C			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		90.0		30.0	30.0	60.0		30.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		84.0		24.0	25.0	* 54		24.0				
Max Q Clear Time (g_c+I1), s		17.7		26.0	23.1	50.0		3.7				
Green Ext Time (p_c), s		9.8		0.0	0.5	3.4		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			36.1									
HCM 6th LOS			D									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

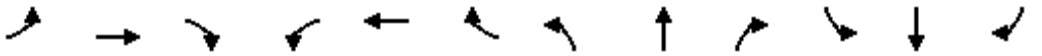
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2210	138	124	2062	0	208
Future Vol, veh/h	2210	138	124	2062	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	2456	153	138	2291	0	231

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2609	0	-	1228
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	450	-	0	*394
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	450	-	-	*394
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	26.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	450	-
HCM Lane V/C Ratio	0.587	-	-	0.306	-
HCM Control Delay (s)	26.3	-	-	16.5	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	3.6	-	-	1.3	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	2	209	73	5	108	180	992	53	74	1448	185
Future Volume (veh/h)	246	2	209	73	5	108	180	992	53	74	1448	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	273	2	232	81	6	120	200	1102	59	82	1609	206
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	361	306	262	174	147	313	1822	98	279	1772	790
Arrive On Green	0.15	0.19	0.19	0.05	0.09	0.09	0.07	0.53	0.53	0.08	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3431	184	1781	3554	1585
Grp Volume(v), veh/h	273	2	232	81	6	120	200	571	590	82	1609	206
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1837	1781	1777	1585
Q Serve(g_s), s	16.0	0.1	16.6	4.9	0.4	8.9	6.4	26.6	26.6	2.7	1.6	0.1
Cycle Q Clear(g_c), s	16.0	0.1	16.6	4.9	0.4	8.9	6.4	26.6	26.6	2.7	1.6	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	447	361	306	262	174	147	313	944	976	279	1772	790
V/C Ratio(X)	0.61	0.01	0.76	0.31	0.03	0.81	0.64	0.60	0.60	0.29	0.91	0.26
Avail Cap(c_a), veh/h	530	608	515	271	343	291	363	944	976	343	1772	790
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.44	0.44	0.44
Uniform Delay (d), s/veh	38.5	39.1	45.8	45.8	49.5	53.4	12.2	19.4	19.4	15.4	0.1	0.1
Incr Delay (d2), s/veh	1.5	0.0	3.8	0.7	0.1	10.3	3.0	2.9	2.8	0.3	4.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.5	0.1	11.1	4.0	0.3	7.1	4.9	16.8	17.2	1.9	1.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	39.1	49.6	46.4	49.6	63.7	15.1	22.3	22.2	15.6	4.1	0.4
LnGrp LOS	D	D	D	D	D	E	B	C	C	B	A	A
Approach Vol, veh/h		507			207			1361			1897	
Approach Delay, s/veh		44.4			56.5			21.2			4.2	
Approach LOS		D			E			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	69.7	11.4	29.2	13.6	65.8	23.4	17.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	9.0	43.0	7.0	39.0	12.0	40.0	24.0	22.0
Max Q Clear Time (g_c+I1), s	4.7	28.6	6.9	18.6	8.4	3.6	18.0	10.9
Green Ext Time (p_c), s	0.1	6.5	0.0	0.7	0.2	18.4	0.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

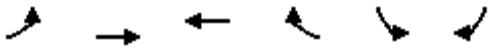
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	1557	65	29	1270
Future Vol, veh/h	0	25	1557	65	29	1270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	28	1730	72	32	1411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	865	0	0	1802	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	297	-	-	347	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	297	-	-	347	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.4
HCM LOS	C		

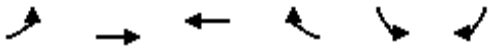
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	347	-
HCM Lane V/C Ratio	-	-	0.094	0.093	-
HCM Control Delay (s)	-	-	18.4	16.4	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	209	1526	1481	40	15	150
Future Volume (veh/h)	209	1526	1481	40	15	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1885	1870	1870	1900	1885
Adj Flow Rate, veh/h	225	1641	1610	43	19	190
Peak Hour Factor	0.93	0.93	0.92	0.92	0.79	0.79
Percent Heavy Veh, %	0	1	2	2	0	1
Cap, veh/h	268	2388	1874	50	382	337
Arrive On Green	0.08	0.67	0.53	0.53	0.21	0.21
Sat Flow, veh/h	1810	3676	3630	94	1810	1598
Grp Volume(v), veh/h	225	1641	807	846	19	190
Grp Sat Flow(s),veh/h/ln	1810	1791	1777	1853	1810	1598
Q Serve(g_s), s	4.8	25.4	35.2	35.5	0.8	9.6
Cycle Q Clear(g_c), s	4.8	25.4	35.2	35.5	0.8	9.6
Prop In Lane	1.00			0.05	1.00	1.00
Lane Grp Cap(c), veh/h	268	2388	942	982	382	337
V/C Ratio(X)	0.84	0.69	0.86	0.86	0.05	0.56
Avail Cap(c_a), veh/h	504	2388	942	982	382	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.31	0.31	1.00	1.00
Uniform Delay (d), s/veh	20.0	9.2	18.2	18.3	28.3	31.8
Incr Delay (d2), s/veh	6.9	1.6	3.4	3.3	0.2	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.1	12.3	16.3	17.0	0.6	14.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.8	10.9	21.6	21.6	28.5	38.4
LnGrp LOS	C	B	C	C	C	D
Approach Vol, veh/h		1866	1653		209	
Approach Delay, s/veh		12.8	21.6		37.5	
Approach LOS		B	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		66.0		24.0	12.3	53.7
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		60.0		19.0	19.0	36.0
Max Q Clear Time (g_c+I1), s		27.4		11.6	6.8	37.5
Green Ext Time (p_c), s		15.5		0.4	0.5	0.0

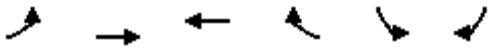
Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	263	1278	1238	370	517	283
Future Volume (veh/h)	263	1278	1238	370	517	283
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	292	1420	1376	411	574	314
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	279	1974	1382	616	574	511
Arrive On Green	0.11	0.56	0.39	0.39	0.32	0.32
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	292	1420	1376	411	574	314
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	10.0	26.6	34.8	19.3	29.0	15.1
Cycle Q Clear(g_c), s	10.0	26.6	34.8	19.3	29.0	15.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	279	1974	1382	616	574	511
V/C Ratio(X)	1.05	0.72	1.00	0.67	1.00	0.61
Avail Cap(c_a), veh/h	279	1974	1382	616	574	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	14.8	27.4	22.7	30.5	25.8
Incr Delay (d2), s/veh	57.2	1.5	23.2	5.6	37.6	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.0	13.4	24.5	11.9	24.8	20.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	83.3	16.4	50.6	28.3	68.1	31.2
LnGrp LOS	F	B	D	C	F	C
Approach Vol, veh/h		1712	1787		888	
Approach Delay, s/veh		27.8	45.5		55.0	
Approach LOS		C	D		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		56.0		34.0	15.0	41.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		50.0		29.0	10.0	35.0
Max Q Clear Time (g_c+I1), s		28.6		31.0	12.0	36.8
Green Ext Time (p_c), s		10.3		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.5
HCM 6th LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	263	1278	1238	370	517	283
Future Volume (veh/h)	263	1278	1238	370	517	283
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	292	1420	1376	411	574	314
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	314	2043	1392	621	594	528
Arrive On Green	0.14	0.57	0.39	0.39	0.33	0.33
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	292	1420	1376	411	574	314
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	15.2	33.9	46.1	25.6	38.0	19.8
Cycle Q Clear(g_c), s	15.2	33.9	46.1	25.6	38.0	19.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	314	2043	1392	621	594	528
V/C Ratio(X)	0.93	0.69	0.99	0.66	0.97	0.59
Avail Cap(c_a), veh/h	314	2043	1392	621	594	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	18.1	36.2	30.0	39.3	33.3
Incr Delay (d2), s/veh	25.0	1.3	21.6	5.5	29.6	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.5	17.7	30.8	15.4	28.8	25.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.7	19.4	57.8	35.5	68.9	38.1
LnGrp LOS	E	B	E	D	E	D
Approach Vol, veh/h		1712	1787		888	
Approach Delay, s/veh		26.8	52.7		58.0	
Approach LOS		C	D		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		75.0		45.0	22.0	53.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		69.0		40.0	17.0	47.0
Max Q Clear Time (g_c+I1), s		35.9		40.0	17.2	48.1
Green Ext Time (p_c), s		12.6		0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.6
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	10.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	158	1009	48	266	1421
Future Vol, veh/h	24	158	1009	48	266	1421
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	172	1097	52	289	1545

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2448	549	0	0	1149	0
Stage 1	1097	-	-	-	-	-
Stage 2	1351	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	~ 26	480	-	-	604	-
Stage 1	281	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 14	480	-	-	604	-
Mov Cap-2 Maneuver	~ 14	-	-	-	-	-
Stage 1	281	-	-	-	-	-
Stage 2	108	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	141	0	2.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	14	480	604	-
HCM Lane V/C Ratio	-	-	1.863	0.358	0.479	-
HCM Control Delay (s)	-	-	$ 959.7	16.6	16.3	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	4	1.6	2.6	-

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	158	1009	48	266	1421
Future Volume (veh/h)	24	158	1009	48	266	1421
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	172	1097	52	289	1545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	233	207	2155	961	442	2654
Arrive On Green	0.13	0.13	0.61	0.61	0.08	0.75
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	26	172	1097	52	289	1545
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	1.2	9.5	15.8	1.2	5.0	17.5
Cycle Q Clear(g_c), s	1.2	9.5	15.8	1.2	5.0	17.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	233	207	2155	961	442	2654
V/C Ratio(X)	0.11	0.83	0.51	0.05	0.65	0.58
Avail Cap(c_a), veh/h	376	335	2155	961	647	2654
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	34.5	38.1	10.1	7.2	8.7	5.1
Incr Delay (d2), s/veh	0.2	9.0	0.9	0.1	1.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	7.5	9.7	0.7	3.0	8.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.7	47.1	10.9	7.3	10.4	6.0
LnGrp LOS	C	D	B	A	B	A
Approach Vol, veh/h	198		1149			1834
Approach Delay, s/veh	45.5		10.8			6.7
Approach LOS	D		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.6	60.6			73.2	16.8
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	18.0	37.0			60.0	19.0
Max Q Clear Time (g_c+I1), s	7.0	17.8			19.5	11.5
Green Ext Time (p_c), s	0.7	8.2			17.6	0.3

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	9.7

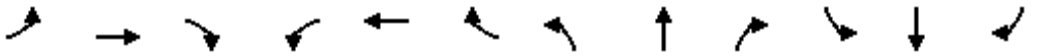
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	28	6	2	9	6	55	4	875	17	93	1073	47
Future Vol, veh/h	28	6	2	9	6	55	4	875	17	93	1073	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	7	2	10	7	60	4	951	18	101	1166	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1881	2371	609	1757	2387	485	1217	0	0	969	0	0
Stage 1	1394	1394	-	968	968	-	-	-	-	-	-	-
Stage 2	487	977	-	789	1419	-	-	-	-	-	-	-
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	44	34	438	54	34	528	569	-	-	707	-	-
Stage 1	149	207	-	273	330	-	-	-	-	-	-	-
Stage 2	531	327	-	350	201	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 29	29	438	40	29	528	569	-	-	707	-	-
Mov Cap-2 Maneuver	~ 29	29	-	40	29	-	-	-	-	-	-	-
Stage 1	148	177	-	271	328	-	-	-	-	-	-	-
Stage 2	458	325	-	288	172	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 443.7	65	0.1	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	569	-	-	31	131	707	-	-
HCM Lane V/C Ratio	0.008	-	-	1.262	0.581	0.143	-	-
HCM Control Delay (s)	11.4	-	-	$ 443.7	65	10.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4.4	2.9	0.5	-	-

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



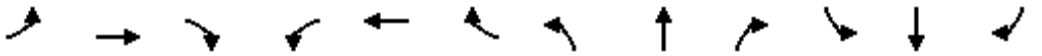
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1256	236	505	517	19	211	32	446	45	17	30
Future Volume (veh/h)	55	1256	236	505	517	19	211	32	446	45	17	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1841	1737	1856	1737	1856	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	59	1336	251	549	562	21	271	41	0	79	30	53
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.78	0.78	0.78	0.57	0.57	0.57
Percent Heavy Veh, %	4	1	4	11	3	11	3	0	5	0	0	0
Cap, veh/h	511	1699	896	619	2226	929	344	181		227	94	137
Arrive On Green	0.04	0.47	0.47	0.06	0.21	0.21	0.10	0.10	0.00	0.05	0.05	0.05
Sat Flow, veh/h	1753	3582	1560	3209	3526	1472	3428	1900	1547	1810	1900	1610
Grp Volume(v), veh/h	59	1336	251	549	562	21	271	41	0	79	30	53
Grp Sat Flow(s),veh/h/ln	1753	1791	1560	1605	1763	1472	1714	1900	1547	1810	1900	1610
Q Serve(g_s), s	2.0	37.5	9.8	20.4	16.0	1.4	9.3	2.4	0.0	4.9	1.8	3.7
Cycle Q Clear(g_c), s	2.0	37.5	9.8	20.4	16.0	1.4	9.3	2.4	0.0	4.9	1.8	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	1699	896	619	2226	929	344	181		227	94	137
V/C Ratio(X)	0.12	0.79	0.28	0.89	0.25	0.02	0.79	0.23		0.35	0.32	0.39
Avail Cap(c_a), veh/h	550	1699	896	695	2226	929	714	348		445	285	299
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.9	26.5	12.9	54.9	23.8	18.1	52.7	50.2	0.0	50.4	55.1	51.9
Incr Delay (d2), s/veh	0.1	3.8	0.8	11.5	0.3	0.0	4.0	0.6	0.0	0.9	2.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	22.5	6.4	14.7	11.9	0.8	7.5	2.1	0.0	4.1	1.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	30.2	13.7	66.4	24.1	18.1	56.8	50.9	0.0	51.3	57.1	53.7
LnGrp LOS	B	C	B	E	C	B	E	D		D	E	D
Approach Vol, veh/h		1646			1132			312	A		162	
Approach Delay, s/veh		27.2			44.5			56.0			53.2	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.2	62.9	11.5	17.4	9.3	81.8	17.0	11.9
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	26.0	29.0	21.0	22.0	7.0	48.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	22.4	39.5	6.9	4.4	4.0	18.0	11.3	5.7
Green Ext Time (p_c), s	0.8	0.0	0.1	0.1	0.0	3.9	0.8	0.2

Intersection Summary	
HCM 6th Ctrl Delay	37.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



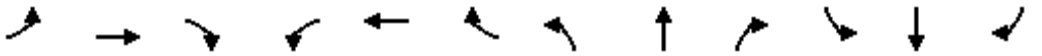
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1720	63	221	988	24	47	2	182	24	2	20
Future Volume (veh/h)	6	1720	63	221	988	24	47	2	182	24	2	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1870	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	6	1830	67	248	1110	27	58	2	225	41	3	34
Peak Hour Factor	0.94	0.94	0.94	0.89	0.89	0.89	0.81	0.81	0.81	0.58	0.58	0.58
Percent Heavy Veh, %	2	2	2	3	2	2	0	0	1	0	0	0
Cap, veh/h	472	2022	902	325	2068	50	230	7	462	112	20	67
Arrive On Green	0.13	0.57	0.57	0.30	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1767	3545	86	1223	50	1598	476	142	477
Grp Volume(v), veh/h	6	1830	67	248	556	581	60	0	225	78	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1767	1777	1855	1273	0	1598	1095	0	0
Q Serve(g_s), s	0.0	54.9	2.3	10.7	0.0	0.0	0.0	0.0	14.0	4.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	54.9	2.3	10.7	0.0	0.0	5.5	0.0	14.0	9.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.05	0.97		1.00	0.53		0.44
Lane Grp Cap(c), veh/h	472	2022	902	325	1036	1082	236	0	462	199	0	0
V/C Ratio(X)	0.01	0.91	0.07	0.76	0.54	0.54	0.25	0.00	0.49	0.39	0.00	0.00
Avail Cap(c_a), veh/h	472	2022	902	325	1036	1082	345	0	586	303	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	0.47	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	23.0	11.6	25.3	0.0	0.0	46.8	0.0	35.3	48.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.7	0.1	14.4	1.8	1.8	0.6	0.0	0.8	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	28.1	1.5	7.0	1.0	1.0	3.0	0.0	9.4	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	26.7	11.7	39.8	1.8	1.8	47.3	0.0	36.1	50.2	0.0	0.0
LnGrp LOS	B	C	B	D	A	A	D	A	D	D	A	A
Approach Vol, veh/h		1903			1385			285			78	
Approach Delay, s/veh		26.1			8.6			38.4			50.2	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	74.3		22.7	21.3	76.0		22.7				
Change Period (Y+Rc), s	5.0	6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s	18.0	59.0		26.0	7.0	* 70		26.0				
Max Q Clear Time (g_c+I1), s	12.7	56.9		16.0	2.0	2.0		11.7				
Green Ext Time (p_c), s	0.3	1.9		0.8	0.0	9.1		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.9	
HCM 6th LOS		C	

Notes

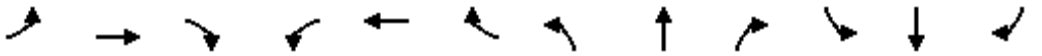
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	1779	71	275	1135	31	86	4	261	171	22	53
Future Volume (veh/h)	20	1779	71	275	1135	31	86	4	261	171	22	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1856	1826	1826	1826	1159	1841	1811	1767	1900
Adj Flow Rate, veh/h	22	1934	77	306	1261	34	102	5	311	219	28	68
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.84	0.84	0.84	0.78	0.78	0.78
Percent Heavy Veh, %	0	1	1	3	5	5	5	50	4	6	9	0
Cap, veh/h	284	2174	86	331	2761	74	377	212	515	346	324	330
Arrive On Green	0.01	0.14	0.14	0.29	1.00	1.00	0.06	0.18	0.18	0.06	0.18	0.18
Sat Flow, veh/h	1810	5078	202	1767	4990	135	1739	1159	1560	1725	1767	1610
Grp Volume(v), veh/h	22	1306	705	306	840	455	102	5	311	219	28	68
Grp Sat Flow(s),veh/h/ln	1810	1716	1849	1767	1662	1802	1739	1159	1560	1725	1767	1610
Q Serve(g_s), s	0.8	44.8	45.0	15.1	0.0	0.0	5.7	0.4	20.0	7.0	1.6	4.2
Cycle Q Clear(g_c), s	0.8	44.8	45.0	15.1	0.0	0.0	5.7	0.4	20.0	7.0	1.6	4.2
Prop In Lane	1.00		0.11	1.00		0.07	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	284	1469	792	331	1839	997	377	212	515	346	324	330
V/C Ratio(X)	0.08	0.89	0.89	0.93	0.46	0.46	0.27	0.02	0.60	0.63	0.09	0.21
Avail Cap(c_a), veh/h	351	1469	792	439	1839	997	377	212	515	346	324	330
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.16	0.16	0.16	0.73	0.73	0.73	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	48.7	48.8	28.2	0.0	0.0	36.7	40.2	33.6	40.7	40.7	39.6
Incr Delay (d2), s/veh	0.0	1.5	2.8	17.1	0.6	1.1	0.4	0.0	2.0	3.7	0.1	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(95%),veh/ln	0.6	23.9	26.0	12.7	0.3	0.5	4.4	0.2	12.4	5.2	1.3	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	50.2	51.6	45.3	0.6	1.1	37.0	40.2	35.6	44.4	40.8	39.9
LnGrp LOS	B	D	D	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		2033			1601			418			315	
Approach Delay, s/veh		50.4			9.3			36.0			43.1	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	57.4	12.0	28.0	7.6	72.4	12.0	28.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	44.0	7.0	22.0	7.0	62.0	7.0	22.0
Max Q Clear Time (g_c+I1), s	17.1	47.0	7.7	6.2	2.8	2.0	9.0	22.0
Green Ext Time (p_c), s	0.6	0.0	0.0	0.2	0.0	11.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1444	767	262	1318	0	0	0	0	1136	23	422
Future Volume (veh/h)	0	1444	767	262	1318	0	0	0	0	1136	23	422
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1856	1885	1841	0				1618	1900	1796
Adj Flow Rate, veh/h	0	1536	0	301	1515	0				1459	0	0
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87				0.79	0.79	0.79
Percent Heavy Veh, %	0	1	3	1	4	0				19	0	7
Cap, veh/h	0	1701		1219	3060	0				1464	0	
Arrive On Green	0.00	0.95	0.00	0.35	0.88	0.00				0.32	0.00	0.00
Sat Flow, veh/h	0	3676	1572	3483	3589	0				4624	0	1522
Grp Volume(v), veh/h	0	1536	0	301	1515	0				1459	0	0
Grp Sat Flow(s),veh/h/ln	0	1791	1572	1742	1749	0				1541	0	1522
Q Serve(g_s), s	0.0	18.1	0.0	7.4	11.5	0.0				37.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	18.1	0.0	7.4	11.5	0.0				37.8	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1701		1219	3060	0				1464	0	
V/C Ratio(X)	0.00	0.90		0.25	0.50	0.00				1.00	0.00	
Avail Cap(c_a), veh/h	0	1701		1219	3060	0				1464	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.55	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	2.0	0.0	27.7	1.7	0.0				40.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.9	0.0	0.1	0.6	0.0				22.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.0	0.0	5.5	2.4	0.0				24.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.9	0.0	27.9	2.2	0.0				63.5	0.0	0.0
LnGrp LOS	A	A		C	A	A				E	A	
Approach Vol, veh/h		1536	A		1816						1459	A
Approach Delay, s/veh		6.9			6.5						63.5	
Approach LOS		A			A						E	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	49.0	63.0		43.0		112.0						
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0						
Max Green Setting (Gmax), s	9.0	* 57		38.0		71.0						
Max Q Clear Time (g_c+I1), s	9.4	20.1		39.8		13.5						
Green Ext Time (p_c), s	0.0	15.3		0.0		17.2						

Intersection Summary												
HCM 6th Ctrl Delay			23.9									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

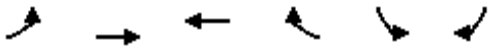
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1782	798	0	2229	439	227
Future Volume (veh/h)	1782	798	0	2229	439	227
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1900	0	1870	1841	1826
Adj Flow Rate, veh/h	1980	0	0	2423	510	0
Peak Hour Factor	0.90	0.90	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	3	0	0	2	4	5
Cap, veh/h	3712		0	3742	597	
Arrive On Green	0.73	0.00	0.00	1.00	0.18	0.00
Sat Flow, veh/h	5233	1610	0	5443	3401	2723
Grp Volume(v), veh/h	1980	0	0	2423	510	0
Grp Sat Flow(s),veh/h/ln	1689	1610	0	1702	1700	1362
Q Serve(g_s), s	20.6	0.0	0.0	0.0	17.5	0.0
Cycle Q Clear(g_c), s	20.6	0.0	0.0	0.0	17.5	0.0
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	3712		0	3742	597	
V/C Ratio(X)	0.53		0.00	0.65	0.85	
Avail Cap(c_a), veh/h	3712		0	3742	992	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.46	1.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	0.0	48.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.4	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.3	0.0	0.0	0.3	12.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.6	0.0	0.0	0.4	51.9	0.0
LnGrp LOS	A		A	A	D	
Approach Vol, veh/h	1980	A		2423	510	A
Approach Delay, s/veh	7.6			0.4	51.9	
Approach LOS	A			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	93.9				93.9	26.1
Change Period (Y+Rc), s	6.0				6.0	5.0
Max Green Setting (Gmax), s	74.0				74.0	35.0
Max Q Clear Time (g_c+I1), s	22.6				2.0	19.5
Green Ext Time (p_c), s	24.6				41.4	1.6

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	178	1831	2089	226	192	140
Future Volume (veh/h)	178	1831	2089	226	192	140
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	222	2289	2785	0	234	0
Peak Hour Factor	0.80	0.80	0.75	0.75	0.82	0.82
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	1094	5109	3319		317	
Arrive On Green	0.63	1.00	0.65	0.00	0.17	0.00
Sat Flow, veh/h	3456	5191	5274	1434	1810	1560
Grp Volume(v), veh/h	222	2289	2785	0	234	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1702	1434	1810	1560
Q Serve(g_s), s	3.2	0.0	50.4	0.0	14.7	0.0
Cycle Q Clear(g_c), s	3.2	0.0	50.4	0.0	14.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	1094	5109	3319		317	
V/C Ratio(X)	0.20	0.45	0.84		0.74	
Avail Cap(c_a), veh/h	1094	5109	3319		317	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	16.2	0.0	46.9	0.0
Incr Delay (d2), s/veh	0.1	0.2	2.7	0.0	14.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.2	24.8	0.0	12.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.7	0.2	18.9	0.0	61.2	0.0
LnGrp LOS	B	A	B		E	
Approach Vol, veh/h		2511	2785	A	234	A
Approach Delay, s/veh		1.6	18.9		61.2	
Approach LOS		A	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		129.0		26.0	45.0	84.0
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6
Max Green Setting (Gmax), s		88.0		21.0	5.0	* 78
Max Q Clear Time (g_c+I1), s		2.0		16.7	5.2	52.4
Green Ext Time (p_c), s		40.2		0.3	0.0	22.5

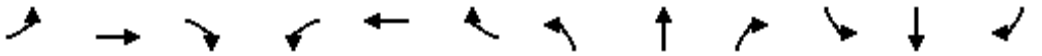
Intersection Summary	
HCM 6th Ctrl Delay	12.8
HCM 6th LOS	B

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	623	310	555	495	0	0	0	0	574	5	625
Future Volume (veh/h)	0	623	310	555	495	0	0	0	0	574	5	625
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1781	1530	1856
Adj Flow Rate, veh/h	0	685	0	624	556	0				649	0	702
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				8	25	3
Cap, veh/h	0	1098		691	1738	0				1216	0	1127
Arrive On Green	0.00	0.31	0.00	0.33	0.92	0.00				0.36	0.00	0.36
Sat Flow, veh/h	0	3618	1610	3510	3243	0				3393	0	3145
Grp Volume(v), veh/h	0	685	0	624	556	0				649	0	702
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1697	0	1572
Q Serve(g_s), s	0.0	19.9	0.0	20.4	2.4	0.0				18.2	0.0	22.1
Cycle Q Clear(g_c), s	0.0	19.9	0.0	20.4	2.4	0.0				18.2	0.0	22.1
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1098		691	1738	0				1216	0	1127
V/C Ratio(X)	0.00	0.62		0.90	0.32	0.00				0.53	0.00	0.62
Avail Cap(c_a), veh/h	0	1098		819	1738	0				1216	0	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.80	0.80	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	35.3	0.0	39.2	2.3	0.0				30.5	0.0	31.8
Incr Delay (d2), s/veh	0.0	2.7	0.0	9.9	0.4	0.0				1.7	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	13.7	0.0	12.9	1.3	0.0				11.9	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	38.0	0.0	49.1	2.7	0.0				32.2	0.0	34.4
LnGrp LOS	A	D		D	A	A				C	A	C
Approach Vol, veh/h		685	A		1180						1351	
Approach Delay, s/veh		38.0			27.2						33.4	
Approach LOS		D			C						C	

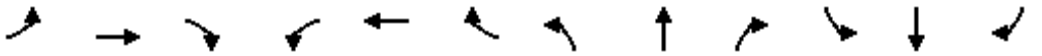
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	28.6	43.4		48.0		72.0						
Change Period (Y+Rc), s	5.0	6.0		5.0		6.0						
Max Green Setting (Gmax), s	28.0	33.0		43.0		66.0						
Max Q Clear Time (g_c+I1), s	22.4	21.9		24.1		4.4						
Green Ext Time (p_c), s	1.3	3.4		5.4		4.2						

Intersection Summary												
HCM 6th Ctrl Delay			32.1									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	607	0	0	600	943	450	5	516	0	0	0
Future Volume (veh/h)	590	607	0	0	600	943	450	5	516	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	634	653	0	0	706	0	560	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	712	2289	0	0	1594		700	0				
Arrive On Green	0.42	1.00	0.00	0.00	0.44	0.00	0.22	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	634	653	0	0	706	0	560	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	20.6	0.0	0.0	0.0	16.3	0.0	20.4	0.0	0.0			
Cycle Q Clear(g_c), s	20.6	0.0	0.0	0.0	16.3	0.0	20.4	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	712	2289	0	0	1594		700	0				
V/C Ratio(X)	0.89	0.29	0.00	0.00	0.44		0.80	0.00				
Avail Cap(c_a), veh/h	712	2289	0	0	1594		700	0				
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.74	0.74	0.00	0.00	0.09	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	33.8	0.0	0.0	0.0	23.3	0.0	43.9	0.0	0.0			
Incr Delay (d2), s/veh	10.4	0.2	0.0	0.0	0.1	0.0	9.3	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	11.6	0.1	0.0	0.0	8.1	0.0	13.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.2	0.2	0.0	0.0	23.3	0.0	53.3	0.0	0.0			
LnGrp LOS	D	A	A	A	C		D	A				
Approach Vol, veh/h		1287			706	A		560	A			
Approach Delay, s/veh		21.9			23.3			53.3				
Approach LOS		C			C			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		89.9			30.9	59.0		32.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		82.0			24.0	* 53		27.0				
Max Q Clear Time (g_c+I1), s		2.0			22.6	18.3		22.4				
Green Ext Time (p_c), s		5.1			0.4	5.3		1.0				

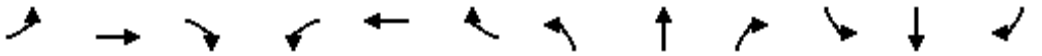
Intersection Summary												
HCM 6th Ctrl Delay			29.2									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	664	877	553	836	118	1475	120	550	66	72	144
Future Volume (veh/h)	277	664	877	553	836	118	1475	120	550	66	72	144
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		0.94	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	308	738	0	614	929	131	1639	133	0	73	80	160
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	376	1340		1463	2614	367	1674	639		104	125	278
Arrive On Green	0.04	0.09	0.00	0.42	0.58	0.58	0.56	0.57	0.00	0.06	0.07	0.07
Sat Flow, veh/h	3456	5025	1610	3510	4484	629	5023	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	308	738	0	614	704	356	1639	133	0	73	80	160
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1709	1674	1870	1585	1781	1870	1585
Q Serve(g_s), s	10.6	16.9	0.0	14.8	13.1	13.2	38.1	4.2	0.0	4.8	5.0	8.0
Cycle Q Clear(g_c), s	10.6	16.9	0.0	14.8	13.1	13.2	38.1	4.2	0.0	4.8	5.0	8.0
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	376	1340		1463	1984	996	1674	639		104	125	278
V/C Ratio(X)	0.82	0.55		0.42	0.35	0.36	0.98	0.21		0.70	0.64	0.58
Avail Cap(c_a), veh/h	490	1340		1463	1984	996	1674	639		430	125	278
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	47.8	0.0	24.7	13.2	13.2	26.2	17.8	0.0	55.5	54.6	45.4
Incr Delay (d2), s/veh	8.3	1.6	0.0	0.2	0.5	1.0	3.2	0.0	0.0	8.4	10.6	2.9
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(95%),veh/ln	9.1	12.3	0.0	10.0	8.4	8.7	13.7	2.4	0.0	4.3	4.9	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	49.5	0.0	24.9	13.7	14.2	29.4	17.9	0.0	63.9	65.2	48.3
LnGrp LOS	E	D		C	B	B	C	B		E	E	D
Approach Vol, veh/h		1046	A		1674			1772	A		313	
Approach Delay, s/veh		54.0			17.9			28.6			56.2	
Approach LOS		D			B			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	56.9	38.0	46.0	14.0	18.1	76.8	13.0	47.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	* 32	40.0	8.0	17.0	32.0	29.0	19.0
Max Q Clear Time (g_c+I1), s	16.8	18.9	40.1	10.0	12.6	15.2	6.8	6.2
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.4	6.3	0.2	0.5

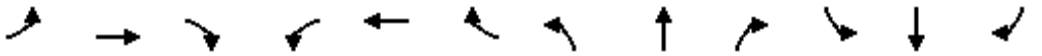
Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	664	877	553	836	118	1475	120	550	66	72	144
Future Volume (veh/h)	277	664	877	553	836	118	1475	120	550	66	72	144
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		0.94	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	308	738	0	614	929	131	1639	133	0	73	80	160
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	376	1340		1463	2614	367	1674	639		104	237	278
Arrive On Green	0.04	0.09	0.00	0.42	0.58	0.58	0.11	0.11	0.00	0.06	0.07	0.07
Sat Flow, veh/h	3456	5025	1610	3510	4484	629	5023	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	308	738	0	614	704	356	1639	133	0	73	80	160
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1709	1674	1870	1585	1781	1777	1585
Q Serve(g_s), s	10.6	16.9	0.0	14.8	13.1	13.2	39.1	7.8	0.0	4.8	2.6	8.0
Cycle Q Clear(g_c), s	10.6	16.9	0.0	14.8	13.1	13.2	39.1	7.8	0.0	4.8	2.6	8.0
Prop In Lane	1.00		1.00	1.00		0.37	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	376	1340		1463	1984	996	1674	639		104	237	278
V/C Ratio(X)	0.82	0.55		0.42	0.35	0.36	0.98	0.21		0.70	0.34	0.58
Avail Cap(c_a), veh/h	490	1340		1463	1984	996	1674	639		430	237	278
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.52	0.52	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.7	47.8	0.0	24.7	13.2	13.2	53.0	38.5	0.0	55.5	53.5	45.4
Incr Delay (d2), s/veh	8.3	1.6	0.0	0.2	0.5	1.0	11.4	0.1	0.0	8.4	0.8	2.9
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(95%),veh/ln	9.1	12.3	0.0	10.0	8.4	8.7	24.5	6.0	0.0	4.3	2.1	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.9	49.5	0.0	24.9	13.7	14.2	64.4	38.6	0.0	63.9	54.3	48.3
LnGrp LOS	E	D		C	B	B	E	D		E	D	D
Approach Vol, veh/h		1046	A		1674			1772	A		313	
Approach Delay, s/veh		54.0			17.9			62.4			53.5	
Approach LOS		D			B			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	56.9	38.0	46.0	14.0	18.1	76.8	13.0	47.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	* 32	40.0	8.0	17.0	32.0	29.0	19.0
Max Q Clear Time (g_c+I1), s	16.8	18.9	41.1	10.0	12.6	15.2	6.8	9.8
Green Ext Time (p_c), s	0.0	3.9	0.0	0.0	0.4	6.3	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	44.5
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	7	32	47	9	410	81	1598	47	240	1031	231
Future Volume (veh/h)	137	7	32	47	9	410	81	1598	47	240	1031	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	8	36	52	10	456	90	1776	52	267	1146	257
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	402	340	68	358	513	249	1535	684	295	1853	826
Arrive On Green	0.06	0.21	0.21	0.04	0.19	0.19	0.09	0.86	0.86	0.13	0.52	0.52
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	152	8	36	52	10	456	90	1776	52	267	1146	257
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	5.2	0.4	2.2	3.5	0.5	23.0	3.4	51.8	0.6	13.6	27.3	11.1
Cycle Q Clear(g_c), s	5.2	0.4	2.2	3.5	0.5	23.0	3.4	51.8	0.6	13.6	27.3	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	211	402	340	68	358	513	249	1535	684	295	1853	826
V/C Ratio(X)	0.72	0.02	0.11	0.77	0.03	0.89	0.36	1.16	0.08	0.90	0.62	0.31
Avail Cap(c_a), veh/h	346	402	340	252	358	513	262	1535	684	342	1853	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62	0.43	0.43	0.43
Uniform Delay (d), s/veh	55.3	37.2	37.9	57.2	39.4	38.5	18.1	8.2	4.7	38.3	20.3	16.4
Incr Delay (d2), s/veh	4.6	0.0	0.1	16.5	0.0	17.2	0.5	75.8	0.1	12.5	0.7	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(95%),veh/ln	4.3	0.3	1.6	3.4	0.4	21.4	2.4	27.8	0.4	12.0	14.6	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	37.2	38.0	73.7	39.4	55.7	18.6	84.0	4.8	50.8	21.0	16.8
LnGrp LOS	E	D	D	E	D	E	B	F	A	D	C	B
Approach Vol, veh/h		196			518			1918			1670	
Approach Delay, s/veh		55.0			57.2			78.8			25.1	
Approach LOS		D			E			E			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.9	57.8	9.6	31.8	10.1	68.6	12.3	29.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	19.0	44.0	17.0	18.0	6.0	57.0	12.0	23.0
Max Q Clear Time (g_c+I1), s	15.6	53.8	5.5	4.2	5.4	29.3	7.2	25.0
Green Ext Time (p_c), s	0.3	0.0	0.1	0.1	0.0	10.7	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.2
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	7	32	47	9	410	81	1598	47	240	1031	231
Future Volume (veh/h)	137	7	32	47	9	410	81	1598	47	240	1031	231
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	152	8	36	52	10	456	90	1776	52	267	1146	257
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	211	402	340	68	358	468	247	2347	69	298	1858	829
Arrive On Green	0.06	0.21	0.21	0.04	0.19	0.19	0.05	0.61	0.61	0.10	0.52	0.52
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	5098	149	1781	3554	1585
Grp Volume(v), veh/h	152	8	36	52	10	456	90	1185	643	267	1146	257
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1702	1844	1781	1777	1585
Q Serve(g_s), s	5.2	0.4	2.2	3.5	0.5	23.0	3.2	30.2	30.2	10.0	27.3	11.1
Cycle Q Clear(g_c), s	5.2	0.4	2.2	3.5	0.5	23.0	3.2	30.2	30.2	10.0	27.3	11.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	211	402	340	68	358	468	247	1567	849	298	1858	829
V/C Ratio(X)	0.72	0.02	0.11	0.77	0.03	0.97	0.36	0.76	0.76	0.90	0.62	0.31
Avail Cap(c_a), veh/h	346	402	340	252	358	468	263	1567	849	395	1858	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62	0.46	0.46	0.46
Uniform Delay (d), s/veh	55.3	37.2	37.9	57.2	39.4	41.8	17.6	18.4	18.4	26.8	20.2	16.3
Incr Delay (d2), s/veh	4.6	0.0	0.1	16.5	0.0	34.8	0.6	2.2	4.0	9.8	0.7	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(95%),veh/ln	4.3	0.3	1.6	3.4	0.4	24.6	2.3	14.3	15.8	7.2	14.7	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.9	37.2	38.0	73.7	39.4	76.6	18.1	20.6	22.4	36.6	20.9	16.8
LnGrp LOS	E	D	D	E	D	E	B	C	C	D	C	B
Approach Vol, veh/h		196			518			1918			1670	
Approach Delay, s/veh		55.0			75.6			21.1			22.8	
Approach LOS		D			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	61.2	9.6	31.8	9.9	68.7	12.3	29.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	19.0	44.0	17.0	18.0	6.0	57.0	12.0	23.0
Max Q Clear Time (g_c+I1), s	12.0	32.2	5.5	4.2	5.2	29.3	7.2	25.0
Green Ext Time (p_c), s	0.4	8.6	0.1	0.1	0.0	10.7	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

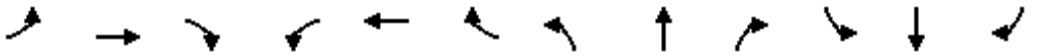
Intersection	
Int Delay, s/veh	2.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	238	1140	140	0	1507
Future Vol, veh/h	0	238	1140	140	0	1507
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	264	1267	156	0	1674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	634	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	422	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	422	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.8	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	422	-
HCM Lane V/C Ratio	-	0.627	-
HCM Control Delay (s)	-	26.8	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	4.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	351	16	726	5	40	13	1160	1177	5	6	777	248
Future Volume (veh/h)	351	16	726	5	40	13	1160	1177	5	6	777	248
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	390	18	0	6	44	14	1289	1308	6	7	863	276
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	561		75	506	476	1870	3052	14	127	888	396
Arrive On Green	0.30	0.30	0.00	0.30	0.30	0.30	0.54	0.84	0.84	0.25	0.25	0.25
Sat Flow, veh/h	1345	1870	1585	137	1687	1585	3456	3628	17	418	3554	1585
Grp Volume(v), veh/h	390	18	0	50	0	14	1289	641	673	7	863	276
Grp Sat Flow(s),veh/h/ln	1345	1870	1585	1824	0	1585	1728	1777	1867	418	1777	1585
Q Serve(g_s), s	33.7	0.8	0.0	0.0	0.0	0.7	32.8	10.7	10.7	1.7	28.9	19.0
Cycle Q Clear(g_c), s	36.0	0.8	0.0	2.3	0.0	0.7	32.8	10.7	10.7	12.6	28.9	19.0
Prop In Lane	1.00		1.00	0.12		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	438	561		581	0	476	1870	1495	1571	127	888	396
V/C Ratio(X)	0.89	0.03		0.09	0.00	0.03	0.69	0.43	0.43	0.06	0.97	0.70
Avail Cap(c_a), veh/h	438	561		581	0	476	1870	1495	1571	127	888	396
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)	0.94	0.94	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	29.7	0.0	30.2	0.0	29.7	20.1	2.4	2.4	43.2	44.6	40.9
Incr Delay (d2), s/veh	18.9	0.0	0.0	0.1	0.0	0.0	1.1	0.9	0.9	0.8	24.0	9.7
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(95%),veh/ln	19.7	0.7	0.0	1.9	0.0	0.5	18.9	5.0	5.3	0.4	22.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	29.7	0.0	30.3	0.0	29.7	21.2	3.3	3.2	44.0	68.6	50.6
LnGrp LOS	E	C		C	A	C	C	A	A	D	E	D
Approach Vol, veh/h		408	A		64			2603			1146	
Approach Delay, s/veh		61.2			30.1			12.1			64.1	
Approach LOS		E			C			B			E	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		107.0		42.0	71.0	36.0		42.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		72.0		36.0	37.0	* 30		36.0				
Max Q Clear Time (g_c+I1), s		12.7		38.0	34.8	30.9		4.3				
Green Ext Time (p_c), s		13.2		0.0	1.3	0.0		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		31.3
HCM 6th LOS		C

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.9

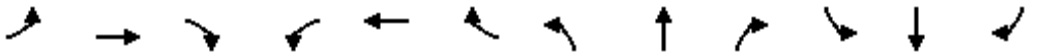
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1742	281	140	2315	0	76
Future Vol, veh/h	1742	281	140	2315	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	1936	312	156	2572	0	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2248	0	-	968
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	368	-	0	*524
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	368	-	-	*524
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	524	-	-	368	-
HCM Lane V/C Ratio	0.161	-	-	0.423	-
HCM Control Delay (s)	13.2	-	-	21.8	-
HCM Lane LOS	B	-	-	C	-
HCM 95th %tile Q(veh)	0.6	-	-	2	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1	68	34	1	78	84	1453	31	92	888	130
Future Volume (veh/h)	195	1	68	34	1	78	84	1453	31	92	888	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	217	1	76	38	1	87	93	1614	34	102	987	144
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	377	312	264	205	130	174	419	2064	43	202	2062	920
Arrive On Green	0.13	0.17	0.17	0.03	0.07	0.07	0.04	0.58	0.58	0.08	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3559	75	1781	3554	1585
Grp Volume(v), veh/h	217	1	76	38	1	87	93	804	844	102	987	144
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1857	1781	1777	1585
Q Serve(g_s), s	13.1	0.1	5.0	2.4	0.1	6.2	2.5	41.7	42.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	13.1	0.1	5.0	2.4	0.1	6.2	2.5	41.7	42.0	2.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	377	312	264	205	130	174	419	1030	1077	202	2062	920
V/C Ratio(X)	0.58	0.00	0.29	0.19	0.01	0.50	0.22	0.78	0.78	0.51	0.48	0.16
Avail Cap(c_a), veh/h	417	468	396	241	281	302	438	1030	1077	293	2062	920
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	42.3	41.7	43.8	49.7	52.0	50.3	9.2	19.4	19.4	19.2	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.6	0.4	0.0	2.2	0.3	5.9	5.7	1.7	0.7	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(95%),veh/ln	9.9	0.0	3.7	1.9	0.1	4.6	1.7	24.6	25.7	2.4	0.4	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	41.7	44.4	50.2	52.0	52.5	9.4	25.2	25.1	20.9	0.7	0.3
LnGrp LOS	D	D	D	D	D	D	A	C	C	C	A	A
Approach Vol, veh/h		294			126			1741			1233	
Approach Delay, s/veh		44.0			51.8			24.3			2.3	
Approach LOS		D			D			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	75.6	8.6	26.0	9.8	75.6	20.3	14.3
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	11.0	51.0	6.0	30.0	6.0	56.0	18.0	18.0
Max Q Clear Time (g_c+I1), s	4.8	44.0	4.4	7.0	4.5	2.0	15.1	8.2
Green Ext Time (p_c), s	0.1	5.4	0.0	0.2	0.0	9.5	0.2	0.1

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

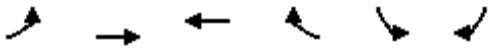
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	1295	83	46	1507
Future Vol, veh/h	0	22	1295	83	46	1507
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	24	1439	92	51	1674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	720	0	0	1531	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	370	-	-	441	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	370	-	-	441	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.4
HCM LOS	C		

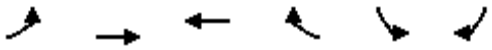
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	370	441	-
HCM Lane V/C Ratio	-	-	0.066	0.116	-
HCM Control Delay (s)	-	-	15.4	14.2	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	1237	1506	12	27	193
Future Volume (veh/h)	82	1237	1506	12	27	193
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1870	1841	1885
Adj Flow Rate, veh/h	86	1302	1793	14	30	217
Peak Hour Factor	0.95	0.95	0.84	0.84	0.89	0.89
Percent Heavy Veh, %	2	5	2	2	4	1
Cap, veh/h	215	2351	2048	16	351	320
Arrive On Green	0.06	0.68	0.57	0.57	0.20	0.20
Sat Flow, veh/h	1781	3561	3707	28	1753	1598
Grp Volume(v), veh/h	86	1302	881	926	30	217
Grp Sat Flow(s),veh/h/ln	1781	1735	1777	1865	1753	1598
Q Serve(g_s), s	1.6	17.4	38.3	38.5	1.3	11.3
Cycle Q Clear(g_c), s	1.6	17.4	38.3	38.5	1.3	11.3
Prop In Lane	1.00			0.02	1.00	1.00
Lane Grp Cap(c), veh/h	215	2351	1007	1057	351	320
V/C Ratio(X)	0.40	0.55	0.87	0.88	0.09	0.68
Avail Cap(c_a), veh/h	472	2351	1007	1057	351	320
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.51	0.51	1.00	1.00
Uniform Delay (d), s/veh	18.9	7.5	16.8	16.8	29.3	33.3
Incr Delay (d2), s/veh	1.2	0.9	5.8	5.6	0.5	11.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	8.7	18.7	19.6	1.0	16.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.1	8.4	22.5	22.4	29.8	44.4
LnGrp LOS	C	A	C	C	C	D
Approach Vol, veh/h		1388	1807		247	
Approach Delay, s/veh		9.2	22.5		42.6	
Approach LOS		A	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.0		23.0	10.0	57.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		61.0		18.0	18.0	38.0
Max Q Clear Time (g_c+I1), s		19.4		13.3	3.6	40.5
Green Ext Time (p_c), s		11.8		0.3	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	339	925	1183	469	350	335
Future Volume (veh/h)	339	925	1183	469	350	335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	377	1028	1314	521	389	372
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	382	2280	1540	687	475	423
Arrive On Green	0.17	0.64	0.43	0.43	0.27	0.27
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	377	1028	1314	521	389	372
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	19.5	17.5	39.9	33.3	24.6	27.0
Cycle Q Clear(g_c), s	19.5	17.5	39.9	33.3	24.6	27.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	382	2280	1540	687	475	423
V/C Ratio(X)	0.99	0.45	0.85	0.76	0.82	0.88
Avail Cap(c_a), veh/h	382	2280	1540	687	475	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.7	10.8	30.6	28.7	41.3	42.2
Incr Delay (d2), s/veh	37.9	0.5	6.2	7.7	14.5	22.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.0	9.9	24.1	19.3	18.5	32.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	74.6	11.4	36.8	36.4	55.8	64.3
LnGrp LOS	E	B	D	D	E	E
Approach Vol, veh/h		1405	1835		761	
Approach Delay, s/veh		28.3	36.7		60.0	
Approach LOS		C	D		E	

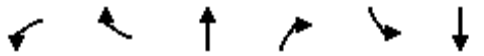
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		83.0		37.0	25.0	58.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		77.0		32.0	20.0	52.0
Max Q Clear Time (g_c+I1), s		19.5		29.0	21.5	41.9
Green Ext Time (p_c), s		8.5		0.9	0.0	7.0

Intersection Summary	
HCM 6th Ctrl Delay	38.2
HCM 6th LOS	D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	170	682	1120	156	629	651
Future Volume (veh/h)	170	682	1120	156	629	651
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	741	1217	170	684	708
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	396	352	1856	828	325	2330
Arrive On Green	0.22	0.22	0.52	0.52	0.08	0.66
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	185	741	1217	170	684	708
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	8.1	20.0	22.4	5.2	7.0	7.7
Cycle Q Clear(g_c), s	8.1	20.0	22.4	5.2	7.0	7.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	396	352	1856	828	325	2330
V/C Ratio(X)	0.47	2.10	0.66	0.21	2.10	0.30
Avail Cap(c_a), veh/h	396	352	1856	828	325	2330
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	30.4	35.0	15.6	11.5	18.6	6.7
Incr Delay (d2), s/veh	0.9	506.2	1.8	0.6	506.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	90.3	13.7	3.3	73.9	4.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.2	541.2	17.4	12.1	525.5	7.0
LnGrp LOS	C	F	B	B	F	A
Approach Vol, veh/h	926		1387			1392
Approach Delay, s/veh	439.3		16.8			261.8
Approach LOS	F		B			F

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.0	53.0			65.0	25.0
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	7.0	47.0			59.0	20.0
Max Q Clear Time (g_c+I1), s	9.0	24.4			9.7	22.0
Green Ext Time (p_c), s	0.0	10.5			5.8	0.0

Intersection Summary		
HCM 6th Ctrl Delay		214.4
HCM 6th LOS		F



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	170	682	1120	156	629	651
Future Volume (veh/h)	170	682	1120	156	629	651
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	741	1217	170	684	708
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	445	752	1393	621	777	2340
Arrive On Green	0.25	0.25	0.39	0.39	0.22	0.66
Sat Flow, veh/h	1781	1585	3647	1585	3456	3647
Grp Volume(v), veh/h	185	741	1217	170	684	708
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1728	1777
Q Serve(g_s), s	10.4	30.0	38.0	8.8	23.0	10.2
Cycle Q Clear(g_c), s	10.4	30.0	38.0	8.8	23.0	10.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	445	752	1393	621	777	2340
V/C Ratio(X)	0.42	0.98	0.87	0.27	0.88	0.30
Avail Cap(c_a), veh/h	445	752	1393	621	1008	2340
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	37.7	31.1	33.7	24.8	45.0	8.7
Incr Delay (d2), s/veh	0.6	28.9	7.9	1.1	7.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	34.8	24.5	6.3	15.9	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.3	60.0	41.6	25.9	52.4	9.1
LnGrp LOS	D	E	D	C	D	A
Approach Vol, veh/h	926		1387			1392
Approach Delay, s/veh	55.7		39.7			30.4
Approach LOS	E		D			C

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	32.0	53.0			85.0	35.0
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	35.0	39.0			79.0	30.0
Max Q Clear Time (g_c+I1), s	25.0	40.0			12.2	32.0
Green Ext Time (p_c), s	2.0	0.0			5.9	0.0

Intersection Summary			
HCM 6th Ctrl Delay		40.2	
HCM 6th LOS		D	

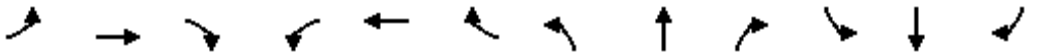
Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	5	4	17	5	71	1	998	6	23	725	13
Future Vol, veh/h	38	5	4	17	5	71	1	998	6	23	725	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	5	4	18	5	77	1	1085	7	25	788	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1392	1939	401	1538	1943	546	802	0	0	1092	0	0
Stage 1	845	845	-	1091	1091	-	-	-	-	-	-	-
Stage 2	547	1094	-	447	852	-	-	-	-	-	-	-
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	101	65	599	79	64	482	817	-	-	635	-	-
Stage 1	324	377	-	229	289	-	-	-	-	-	-	-
Stage 2	489	288	-	560	374	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	62	599	71	61	482	817	-	-	635	-	-
Mov Cap-2 Maneuver	77	62	-	71	61	-	-	-	-	-	-	-
Stage 1	324	362	-	229	289	-	-	-	-	-	-	-
Stage 2	402	288	-	526	359	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	106.1	40.7	0	0.3
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	81	198	635	-	-
HCM Lane V/C Ratio	0.001	-	-	0.631	0.511	0.039	-	-
HCM Control Delay (s)	9.4	-	-	106.1	40.7	10.9	-	-
HCM Lane LOS	A	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2.9	2.6	0.1	-	-



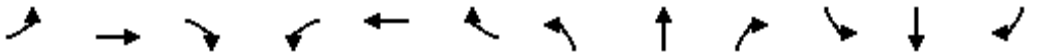
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	839	332	730	1422	23	610	26	642	128	43	66
Future Volume (veh/h)	51	839	332	730	1422	23	610	26	642	128	43	66
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1841	1737	1856	1737	1856	1900	1826	1900	1900	1900
Adj Flow Rate, veh/h	54	893	353	793	1546	25	670	29	0	162	54	84
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.91	0.91	0.91	0.79	0.79	0.79
Percent Heavy Veh, %	4	1	4	11	3	11	3	0	5	0	0	0
Cap, veh/h	146	968	747	864	1780	743	714	340		334	130	167
Arrive On Green	0.03	0.27	0.27	0.09	0.17	0.17	0.21	0.18	0.00	0.10	0.07	0.07
Sat Flow, veh/h	1753	3582	1560	3209	3526	1472	3428	1900	1547	1810	1900	1610
Grp Volume(v), veh/h	54	893	353	793	1546	25	670	29	0	162	54	84
Grp Sat Flow(s),veh/h/ln	1753	1791	1560	1605	1763	1472	1714	1900	1547	1810	1900	1610
Q Serve(g_s), s	2.7	29.1	18.3	29.4	51.3	1.7	23.1	1.5	0.0	9.8	3.3	5.9
Cycle Q Clear(g_c), s	2.7	29.1	18.3	29.4	51.3	1.7	23.1	1.5	0.0	9.8	3.3	5.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	146	968	747	864	1780	743	714	340		334	130	167
V/C Ratio(X)	0.37	0.92	0.47	0.92	0.87	0.03	0.94	0.09		0.49	0.41	0.50
Avail Cap(c_a), veh/h	187	968	747	909	1780	743	714	491		337	285	298
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.28	0.28	0.28	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.6	42.6	21.1	53.3	46.1	25.5	46.7	41.1	0.0	45.7	53.6	50.9
Incr Delay (d2), s/veh	1.6	15.3	2.1	4.6	1.8	0.0	20.0	0.1	0.0	1.1	2.1	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(95%),veh/ln	2.1	20.8	11.4	16.3	28.9	1.1	17.4	1.3	0.0	8.0	3.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	57.9	23.2	57.9	47.9	25.5	66.8	41.2	0.0	46.8	55.7	53.2
LnGrp LOS	C	E	C	E	D	C	E	D		D	E	D
Approach Vol, veh/h		1300			2364			699	A		300	
Approach Delay, s/veh		47.5			51.1			65.7			50.2	
Approach LOS		D			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.3	38.4	16.8	27.5	9.2	66.6	30.0	14.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	34.0	21.0	12.0	31.0	7.0	48.0	25.0	18.0
Max Q Clear Time (g_c+I1), s	31.4	31.1	11.8	3.5	4.7	53.3	25.1	7.9
Green Ext Time (p_c), s	0.9	0.0	0.0	0.1	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



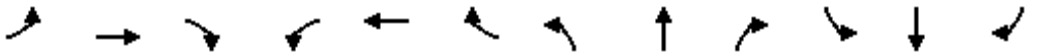
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1490	110	394	1949	32	118	8	269	28	18	28
Future Volume (veh/h)	32	1490	110	394	1949	32	118	8	269	28	18	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1870	1870	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	35	1637	121	443	2190	36	131	9	299	33	21	33
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89	0.90	0.90	0.90	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	3	2	2	0	0	1	0	0	0
Cap, veh/h	179	1658	740	541	2538	42	224	12	762	64	45	41
Arrive On Green	0.06	0.93	0.93	0.53	1.00	1.00	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	3554	1585	1767	3578	59	778	55	1598	108	209	194
Grp Volume(v), veh/h	35	1637	121	443	1084	1142	140	0	299	87	0	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1767	1777	1860	833	0	1598	511	0	0
Q Serve(g_s), s	1.3	46.8	0.7	18.2	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0
Cycle Q Clear(g_c), s	1.3	46.8	0.7	18.2	0.0	0.0	20.5	0.0	0.0	23.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.03	0.94		1.00	0.38		0.38
Lane Grp Cap(c), veh/h	179	1658	740	541	1260	1319	236	0	762	150	0	0
V/C Ratio(X)	0.20	0.99	0.16	0.82	0.86	0.87	0.59	0.00	0.39	0.58	0.00	0.00
Avail Cap(c_a), veh/h	232	1658	740	541	1260	1319	240	0	766	155	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.14	0.14	0.14	0.58	0.58	0.58	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	3.7	2.2	23.6	0.0	0.0	45.1	0.0	20.2	45.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	5.8	0.1	5.8	4.7	4.7	3.8	0.0	0.3	5.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	4.0	0.4	11.0	3.0	3.1	7.6	0.0	9.2	5.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	9.5	2.2	29.4	4.7	4.7	48.9	0.0	20.5	50.1	0.0	0.0
LnGrp LOS	B	A	A	C	A	A	D	A	C	D	A	A
Approach Vol, veh/h		1793			2669			439			87	
Approach Delay, s/veh		9.2			8.8			29.6			50.1	
Approach LOS		A			A			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.6	62.0		31.6	8.4	91.1		31.6				
Change Period (Y+Rc), s	6.0	* 6		6.0	5.0	6.0		6.0				
Max Green Setting (Gmax), s	21.0	* 56		26.0	7.0	70.0		26.0				
Max Q Clear Time (g_c+I1), s	20.2	48.8		22.5	3.3	2.0		25.6				
Green Ext Time (p_c), s	0.1	5.8		0.7	0.0	39.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		11.5
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



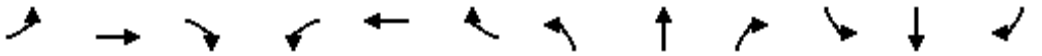
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1640	95	322	2272	16	115	14	260	193	14	52
Future Volume (veh/h)	34	1640	95	322	2272	16	115	14	260	193	14	52
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1885	1885	1856	1826	1826	1826	1159	1841	1811	1767	1900
Adj Flow Rate, veh/h	37	1783	103	362	2553	18	121	15	274	238	17	64
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.95	0.95	0.95	0.81	0.81	0.81
Percent Heavy Veh, %	0	1	1	3	5	5	5	50	4	6	9	0
Cap, veh/h	168	2176	125	385	2828	20	352	145	423	367	279	302
Arrive On Green	0.06	0.87	0.87	0.29	1.00	1.00	0.08	0.13	0.13	0.11	0.16	0.16
Sat Flow, veh/h	1810	4977	287	1767	5107	36	1739	1159	1560	1725	1767	1610
Grp Volume(v), veh/h	37	1228	658	362	1660	911	121	15	274	238	17	64
Grp Sat Flow(s),veh/h/ln	1810	1716	1834	1767	1662	1819	1739	1159	1560	1725	1767	1610
Q Serve(g_s), s	1.3	19.0	19.2	14.9	0.0	0.0	7.2	1.4	15.0	13.0	1.0	4.0
Cycle Q Clear(g_c), s	1.3	19.0	19.2	14.9	0.0	0.0	7.2	1.4	15.0	13.0	1.0	4.0
Prop In Lane	1.00		0.16	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	168	1500	802	385	1840	1008	352	145	423	367	279	302
V/C Ratio(X)	0.22	0.82	0.82	0.94	0.90	0.90	0.34	0.10	0.65	0.65	0.06	0.21
Avail Cap(c_a), veh/h	190	1500	802	465	1840	1008	380	145	423	367	279	302
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.52	0.52	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	5.4	5.4	19.1	0.0	0.0	41.2	46.5	38.7	40.4	43.0	41.3
Incr Delay (d2), s/veh	0.3	2.6	4.8	15.9	4.3	7.5	0.6	0.3	3.4	4.0	0.1	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(95%),veh/ln	1.0	4.8	5.7	8.5	2.0	3.8	5.7	0.7	12.0	10.8	0.8	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	8.0	10.2	35.1	4.3	7.5	41.8	46.8	42.1	44.4	43.1	41.6
LnGrp LOS	B	A	B	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1923			2933			410			319	
Approach Delay, s/veh		8.9			9.1			42.2			43.8	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.5	58.5	14.1	24.9	8.5	72.5	18.0	21.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	23.0	47.0	11.0	17.0	5.0	65.0	13.0	15.0
Max Q Clear Time (g_c+I1), s	16.9	21.2	9.2	6.0	3.3	2.0	15.0	17.0
Green Ext Time (p_c), s	0.6	15.1	0.0	0.1	0.0	39.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.4
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1368	725	213	1560	0	0	0	0	1114	54	1026
Future Volume (veh/h)	0	1368	725	213	1560	0	0	0	0	1114	54	1026
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1885	1856	1885	1841	0				1618	1900	1796
Adj Flow Rate, veh/h	0	1609	0	234	1714	0				1281	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91				0.90	0.90	0.90
Percent Heavy Veh, %	0	1	3	1	4	0				19	0	7
Cap, veh/h	0	1642		366	2146	0				1363	0	
Arrive On Green	0.00	0.92	0.00	0.11	0.61	0.00				0.29	0.00	0.00
Sat Flow, veh/h	0	3676	1572	3483	3589	0				4624	0	1522
Grp Volume(v), veh/h	0	1609	0	234	1714	0				1281	0	0
Grp Sat Flow(s),veh/h/ln	0	1791	1572	1742	1749	0				1541	0	1522
Q Serve(g_s), s	0.0	44.2	0.0	7.7	44.6	0.0				32.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	44.2	0.0	7.7	44.6	0.0				32.4	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1642		366	2146	0				1363	0	
V/C Ratio(X)	0.00	0.98		0.64	0.80	0.00				0.94	0.00	
Avail Cap(c_a), veh/h	0	1642		377	2146	0				1387	0	
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.58	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	4.6	0.0	51.5	17.6	0.0				41.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	12.9	0.0	3.4	3.2	0.0				12.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	7.6	0.0	6.3	23.8	0.0				19.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	17.4	0.0	54.9	20.8	0.0				53.7	0.0	0.0
LnGrp LOS	A	B		D	C	A				D	A	
Approach Vol, veh/h		1609	A		1948						1281	A
Approach Delay, s/veh		17.4			24.9						53.7	
Approach LOS		B			C						D	

Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	18.6	61.0		40.4		79.6						
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0						
Max Green Setting (Gmax), s	13.0	* 55		36.0		73.0						
Max Q Clear Time (g_c+I1), s	9.7	46.2		34.4		46.6						
Green Ext Time (p_c), s	0.2	6.4		1.0		15.2						

Intersection Summary			
HCM 6th Ctrl Delay		30.0	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

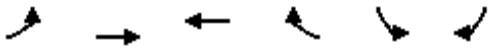
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2056	426	0	2124	745	243
Future Volume (veh/h)	2056	426	0	2124	745	243
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1900	0	1870	1841	1826
Adj Flow Rate, veh/h	2187	0	0	2309	866	0
Peak Hour Factor	0.94	0.94	0.92	0.92	0.86	0.86
Percent Heavy Veh, %	3	0	0	2	4	5
Cap, veh/h	3176		0	3201	957	
Arrive On Green	0.63	0.00	0.00	1.00	0.28	0.00
Sat Flow, veh/h	5233	1610	0	5443	3401	2723
Grp Volume(v), veh/h	2187	0	0	2309	866	0
Grp Sat Flow(s),veh/h/ln	1689	1610	0	1702	1700	1362
Q Serve(g_s), s	34.0	0.0	0.0	0.0	29.5	0.0
Cycle Q Clear(g_c), s	34.0	0.0	0.0	0.0	29.5	0.0
Prop In Lane		1.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	3176		0	3201	957	
V/C Ratio(X)	0.69		0.00	0.72	0.90	
Avail Cap(c_a), veh/h	3176		0	3201	1134	
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.66	1.00	0.00
Uniform Delay (d), s/veh	14.7	0.0	0.0	0.0	41.6	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	1.0	9.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.7	0.0	0.0	0.5	19.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.9	0.0	0.0	1.0	50.8	0.0
LnGrp LOS	B		A	A	D	
Approach Vol, veh/h	2187	A		2309	866	A
Approach Delay, s/veh	15.9			1.0	50.8	
Approach LOS	B			A	D	

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	81.2				81.2	38.8
Change Period (Y+Rc), s	6.0				6.0	5.0
Max Green Setting (Gmax), s	69.0				69.0	40.0
Max Q Clear Time (g_c+I1), s	36.0				2.0	31.5
Green Ext Time (p_c), s	22.1				36.5	2.3

Intersection Summary	
HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



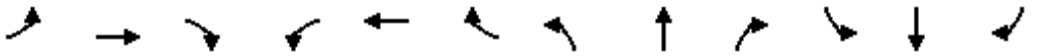
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	121	2178	1913	180	199	211
Future Volume (veh/h)	121	2178	1913	180	199	211
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1841	1870	1693	1900	1841
Adj Flow Rate, veh/h	142	2562	2149	0	262	0
Peak Hour Factor	0.85	0.85	0.89	0.89	0.76	0.76
Percent Heavy Veh, %	2	4	2	14	0	4
Cap, veh/h	202	3643	3191		332	
Arrive On Green	0.12	1.00	0.62	0.00	0.18	0.00
Sat Flow, veh/h	3456	5191	5274	1434	1810	1560
Grp Volume(v), veh/h	142	2562	2149	0	262	0
Grp Sat Flow(s),veh/h/ln	1728	1675	1702	1434	1810	1560
Q Serve(g_s), s	4.7	0.0	32.7	0.0	16.6	0.0
Cycle Q Clear(g_c), s	4.7	0.0	32.7	0.0	16.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	202	3643	3191		332	
V/C Ratio(X)	0.70	0.70	0.67		0.79	
Avail Cap(c_a), veh/h	576	3643	3191		332	
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.68	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	52.0	0.0	14.6	0.0	46.8	0.0
Incr Delay (d2), s/veh	3.0	0.8	1.2	0.0	17.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	0.5	17.3	0.0	13.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.0	0.8	15.7	0.0	64.0	0.0
LnGrp LOS	E	A	B		E	
Approach Vol, veh/h		2704	2149	A	262	A
Approach Delay, s/veh		3.6	15.7		64.0	
Approach LOS		A	B		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.0		27.0	12.0	81.0
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		87.0		22.0	20.0	62.0
Max Q Clear Time (g_c+I1), s		2.0		18.6	6.7	34.7
Green Ext Time (p_c), s		50.6		0.3	0.3	19.0

Intersection Summary		
HCM 6th Ctrl Delay		11.8
HCM 6th LOS		B

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	801	625	508	640	0	0	0	0	824	5	825
Future Volume (veh/h)	0	801	625	508	640	0	0	0	0	824	5	825
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1856	1900	1900	1663	0				1781	1530	1856
Adj Flow Rate, veh/h	0	880	0	571	719	0				930	0	927
Peak Hour Factor	0.91	0.91	0.91	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	0	0	16	0				8	25	3
Cap, veh/h	0	1028		1521	2449	0				1414	0	1310
Arrive On Green	0.00	0.29	0.00	0.14	0.26	0.00				0.42	0.00	0.42
Sat Flow, veh/h	0	3618	1610	3510	3243	0				3393	0	3145
Grp Volume(v), veh/h	0	880	0	571	719	0				930	0	927
Grp Sat Flow(s),veh/h/ln	0	1763	1610	1755	1580	0				1697	0	1572
Q Serve(g_s), s	0.0	28.3	0.0	17.7	22.0	0.0				26.4	0.0	29.3
Cycle Q Clear(g_c), s	0.0	28.3	0.0	17.7	22.0	0.0				26.4	0.0	29.3
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1028		1521	2449	0				1414	0	1310
V/C Ratio(X)	0.00	0.86		0.38	0.29	0.00				0.66	0.00	0.71
Avail Cap(c_a), veh/h	0	1028		1521	2449	0				1414	0	1310
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.53	0.53	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	40.1	0.0	36.7	18.2	0.0				28.1	0.0	28.9
Incr Delay (d2), s/veh	0.0	9.1	0.0	0.1	0.2	0.0				2.4	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	19.3	0.0	11.8	12.9	0.0				16.0	0.0	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	49.2	0.0	36.8	18.4	0.0				30.5	0.0	32.2
LnGrp LOS	A	D		D	B	A				C	A	C
Approach Vol, veh/h		880	A		1290						1857	
Approach Delay, s/veh		49.2			26.5						31.4	
Approach LOS		D			C						C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	59.0	41.0		55.0		100.0
Change Period (Y+Rc), s	6.0	* 6		5.0		6.0
Max Green Setting (Gmax), s	19.0	* 35		50.0		59.0
Max Q Clear Time (g_c+I1), s	19.7	30.3		31.3		24.0
Green Ext Time (p_c), s	0.0	2.4		8.0		5.6

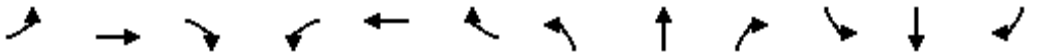
Intersection Summary		
HCM 6th Ctrl Delay		33.7
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	770	855	0	0	528	519	620	5	493	0	0	0
Future Volume (veh/h)	770	855	0	0	528	519	620	5	493	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1856	1722	0	0	1900	1900	1633	1307	1796			
Adj Flow Rate, veh/h	828	919	0	0	621	0	769	0	0			
Peak Hour Factor	0.93	0.93	0.93	0.85	0.85	0.85	0.81	0.81	0.81			
Percent Heavy Veh, %	3	12	0	0	0	0	18	40	7			
Cap, veh/h	1086	1963	0	0	842		959	0				
Arrive On Green	0.21	0.40	0.00	0.00	0.23	0.00	0.31	0.00	0.00			
Sat Flow, veh/h	3428	3358	0	0	3705	1610	3111	0	1522			
Grp Volume(v), veh/h	828	919	0	0	621	0	769	0	0			
Grp Sat Flow(s),veh/h/ln	1714	1636	0	0	1805	1610	1555	0	1522			
Q Serve(g_s), s	27.2	24.8	0.0	0.0	19.1	0.0	27.3	0.0	0.0			
Cycle Q Clear(g_c), s	27.2	24.8	0.0	0.0	19.1	0.0	27.3	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	1086	1963	0	0	842		959	0				
V/C Ratio(X)	0.76	0.47	0.00	0.00	0.74		0.80	0.00				
Avail Cap(c_a), veh/h	1114	1963	0	0	842		959	0				
HCM Platoon Ratio	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.49	0.49	0.00	0.00	0.54	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	43.0	21.8	0.0	0.0	42.6	0.0	38.1	0.0	0.0			
Incr Delay (d2), s/veh	1.5	0.4	0.0	0.0	3.2	0.0	7.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	16.2	13.9	0.0	0.0	12.3	0.0	16.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	22.2	0.0	0.0	45.7	0.0	45.2	0.0	0.0			
LnGrp LOS	D	C	A	A	D		D	A				
Approach Vol, veh/h		1747			621	A		769	A			
Approach Delay, s/veh		32.8			45.7			45.2				
Approach LOS		C			D			D				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		78.0			44.0	34.0		42.0				
Change Period (Y+Rc), s		6.0			6.0	* 6		5.0				
Max Green Setting (Gmax), s		72.0			39.0	* 28		37.0				
Max Q Clear Time (g_c+I1), s		26.8			29.2	21.1		29.3				
Green Ext Time (p_c), s		7.9			2.4	2.2		1.9				

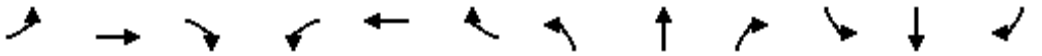
Intersection Summary	
HCM 6th Ctrl Delay	38.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1193	1133	660	601	43	1412	201	435	104	216	204
Future Volume (veh/h)	121	1193	1133	660	601	43	1412	201	435	104	216	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	1326	0	733	668	47	1569	218	0	113	235	222
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	188	1340		1034	2510	176	1622	686		144	234	284
Arrive On Green	0.02	0.09	0.00	0.29	0.52	0.52	0.54	0.61	0.00	0.08	0.13	0.13
Sat Flow, veh/h	3456	5025	1610	3510	4872	341	5023	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	132	1326	0	733	465	250	1569	218	0	113	235	222
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1809	1674	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.6	31.6	0.0	22.3	9.2	9.3	36.1	6.7	0.0	7.5	15.0	15.0
Cycle Q Clear(g_c), s	4.6	31.6	0.0	22.3	9.2	9.3	36.1	6.7	0.0	7.5	15.0	15.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1340		1034	1754	932	1622	686		144	234	284
V/C Ratio(X)	0.70	0.99		0.71	0.27	0.27	0.97	0.32		0.79	1.01	0.78
Avail Cap(c_a), veh/h	230	1340		1034	1754	932	1633	686		371	234	284
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.26	0.26	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	54.6	0.0	37.7	16.3	16.4	27.0	16.0	0.0	54.1	52.5	47.0
Incr Delay (d2), s/veh	7.1	22.2	0.0	2.3	0.4	0.7	5.8	0.1	0.0	9.0	60.2	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(95%),veh/ln	4.0	23.7	0.0	14.8	6.4	7.0	14.9	3.9	0.0	6.7	16.4	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	76.8	0.0	40.0	16.7	17.1	32.8	16.1	0.0	63.2	112.7	60.1
LnGrp LOS	E	E		D	B	B	C	B		E	F	E
Approach Vol, veh/h		1458	A		1448			1787	A		570	
Approach Delay, s/veh		75.7			28.6			30.8			82.4	
Approach LOS		E			C			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.1	38.0	44.7	21.0	11.5	68.6	15.7	50.0
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	* 32	39.0	15.0	8.0	35.0	25.0	29.0
Max Q Clear Time (g_c+I1), s	24.3	33.6	38.1	17.0	6.6	11.3	9.5	8.7
Green Ext Time (p_c), s	0.0	0.0	0.6	0.0	0.0	4.5	0.2	1.1

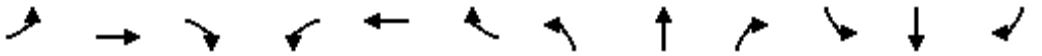
Intersection Summary	
HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1193	1133	660	601	43	1412	201	435	104	216	204
Future Volume (veh/h)	121	1193	1133	660	601	43	1412	201	435	104	216	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1841	1900	1900	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	1326	0	733	668	47	1569	218	0	113	235	222
Peak Hour Factor	0.92	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	0	0	2	2	2	2	2	2	2	2
Cap, veh/h	188	1382		1287	2902	203	1591	675		144	444	284
Arrive On Green	0.02	0.09	0.00	0.37	0.60	0.60	0.10	0.12	0.00	0.08	0.13	0.13
Sat Flow, veh/h	3456	5025	1610	3510	4872	341	5023	1870	1585	1781	3554	1585
Grp Volume(v), veh/h	132	1326	0	733	465	250	1569	218	0	113	235	222
Grp Sat Flow(s),veh/h/ln	1728	1675	1610	1755	1702	1809	1674	1870	1585	1781	1777	1585
Q Serve(g_s), s	4.6	31.5	0.0	20.1	7.7	7.8	37.4	12.8	0.0	7.5	7.4	15.0
Cycle Q Clear(g_c), s	4.6	31.5	0.0	20.1	7.7	7.8	37.4	12.8	0.0	7.5	7.4	15.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1382		1287	2028	1077	1591	675		144	444	284
V/C Ratio(X)	0.70	0.96		0.57	0.23	0.23	0.99	0.32		0.79	0.53	0.78
Avail Cap(c_a), veh/h	230	1382		1287	2028	1077	1591	675		356	444	284
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	0.54	0.54	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	53.9	0.0	30.4	11.4	11.4	53.5	39.4	0.0	54.1	49.2	47.0
Incr Delay (d2), s/veh	7.1	16.3	0.0	0.6	0.3	0.5	13.5	0.1	0.0	9.1	1.2	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(95%),veh/ln	4.0	22.8	0.0	13.1	5.0	5.6	24.0	9.5	0.0	6.7	6.1	11.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	70.2	0.0	31.0	11.6	11.9	67.0	39.6	0.0	63.2	50.4	60.1
LnGrp LOS	E	E		C	B	B	E	D		E	D	E
Approach Vol, veh/h		1458	A		1448			1787	A		570	
Approach Delay, s/veh		69.7			21.5			63.6			56.7	
Approach LOS		E			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	39.0	44.0	21.0	11.5	78.5	15.7	49.3
Change Period (Y+Rc), s	6.0	* 6	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	* 33	38.0	15.0	8.0	36.0	24.0	29.0
Max Q Clear Time (g_c+I1), s	22.1	33.5	39.4	17.0	6.6	9.8	9.5	14.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	4.6	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

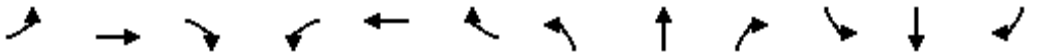
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	497	25	167	100	38	333	126	1218	69	383	1503	123
Future Volume (veh/h)	497	25	167	100	38	333	126	1218	69	383	1503	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	28	186	111	42	370	140	1353	77	426	1670	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	601	323	273	136	140	409	183	1366	609	389	1810	807
Arrive On Green	0.17	0.17	0.17	0.08	0.08	0.08	0.08	0.51	0.51	0.18	0.51	0.51
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	552	28	186	111	42	370	140	1353	77	426	1670	137
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	18.8	1.5	13.2	7.4	2.5	9.0	5.8	45.2	3.0	22.0	52.2	5.6
Cycle Q Clear(g_c), s	18.8	1.5	13.2	7.4	2.5	9.0	5.8	45.2	3.0	22.0	52.2	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	601	323	273	136	140	409	183	1366	609	389	1810	807
V/C Ratio(X)	0.92	0.09	0.68	0.81	0.30	0.90	0.76	0.99	0.13	1.09	0.92	0.17
Avail Cap(c_a), veh/h	605	323	273	178	140	409	183	1366	609	389	1810	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.09	0.09	0.09
Uniform Delay (d), s/veh	48.7	41.7	46.6	54.6	52.5	43.1	27.9	29.1	18.8	39.2	27.3	15.8
Incr Delay (d2), s/veh	19.0	0.1	6.7	19.2	1.2	22.9	12.9	18.6	0.3	46.8	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.8	1.3	9.6	7.3	2.2	19.1	5.3	26.4	2.1	19.6	23.4	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	41.8	53.2	73.8	53.7	65.9	40.8	47.7	19.1	86.0	28.3	15.9
LnGrp LOS	E	D	D	E	D	E	D	D	B	F	C	B
Approach Vol, veh/h		766			523			1570			2233	
Approach Delay, s/veh		63.3			66.6			45.7			38.5	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.0	52.1	14.2	26.7	12.0	67.1	25.9	15.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	22.0	46.0	12.0	18.0	7.0	61.0	21.0	9.0
Max Q Clear Time (g_c+I1), s	24.0	47.2	9.4	15.2	7.8	54.2	20.8	11.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.2	0.0	5.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	497	25	167	100	38	333	126	1218	69	383	1503	123
Future Volume (veh/h)	497	25	167	100	38	333	126	1218	69	383	1503	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	552	28	186	111	42	370	140	1353	77	426	1670	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	576	324	275	136	156	390	183	1998	114	457	1806	806
Arrive On Green	0.17	0.17	0.17	0.08	0.08	0.08	0.12	0.81	0.81	0.16	0.51	0.51
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	4943	281	1781	3554	1585
Grp Volume(v), veh/h	552	28	186	111	42	370	140	932	498	426	1670	137
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1702	1820	1781	1777	1585
Q Serve(g_s), s	19.0	1.5	13.2	7.4	2.5	10.0	5.6	13.9	13.9	16.7	52.3	5.6
Cycle Q Clear(g_c), s	19.0	1.5	13.2	7.4	2.5	10.0	5.6	13.9	13.9	16.7	52.3	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	576	324	275	136	156	390	183	1376	736	457	1806	806
V/C Ratio(X)	0.96	0.09	0.68	0.81	0.27	0.95	0.77	0.68	0.68	0.93	0.92	0.17
Avail Cap(c_a), veh/h	576	324	275	178	156	390	183	1376	736	539	1806	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72	0.09	0.09	0.09
Uniform Delay (d), s/veh	49.6	41.6	46.4	54.6	51.6	44.5	26.3	8.2	8.2	21.7	27.4	15.9
Incr Delay (d2), s/veh	27.4	0.1	6.5	19.2	0.9	32.8	13.1	2.0	3.6	3.0	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.6	1.3	9.6	7.3	2.2	20.5	5.0	5.6	6.3	8.2	23.4	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.9	41.7	52.9	73.8	52.5	77.3	39.4	10.1	11.8	24.7	28.4	15.9
LnGrp LOS	E	D	D	E	D	E	D	B	B	C	C	B
Approach Vol, veh/h		766			523			1570			2233	
Approach Delay, s/veh		69.8			74.6			13.3			26.9	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.5	54.5	14.2	26.8	12.0	67.0	25.0	16.0
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	25.0	43.0	12.0	18.0	7.0	61.0	20.0	10.0
Max Q Clear Time (g_c+I1), s	18.7	15.9	9.4	15.2	7.6	54.3	21.0	12.0
Green Ext Time (p_c), s	0.8	11.4	0.1	0.2	0.0	5.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	34.1
HCM 6th LOS	C

Notes

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

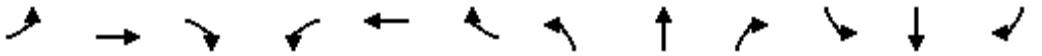
Intersection	
Int Delay, s/veh	1.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	133	1525	207	0	1304
Future Vol, veh/h	0	133	1525	207	0	1304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	148	1694	230	0	1449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	847	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	305	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	305	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	27.4	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	305	-
HCM Lane V/C Ratio	-	0.485	-
HCM Control Delay (s)	-	27.4	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	2.5	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	236	41	1001	5	23	11	636	1056	5	15	1410	333
Future Volume (veh/h)	236	41	1001	5	23	11	636	1056	5	15	1410	333
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	262	46	0	6	26	12	707	1173	6	17	1567	370
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	315	374		79	314	317	1048	2912	15	229	1599	713
Arrive On Green	0.20	0.20	0.00	0.20	0.20	0.20	0.30	0.80	0.80	0.45	0.45	0.45
Sat Flow, veh/h	1370	1870	1585	219	1569	1585	3456	3625	19	476	3554	1585
Grp Volume(v), veh/h	262	46	0	32	0	12	707	575	604	17	1567	370
Grp Sat Flow(s),veh/h/ln	1370	1870	1585	1788	0	1585	1728	1777	1867	476	1777	1585
Q Serve(g_s), s	22.3	2.4	0.0	0.0	0.0	0.7	21.5	11.3	11.3	2.9	52.1	20.1
Cycle Q Clear(g_c), s	24.0	2.4	0.0	1.7	0.0	0.7	21.5	11.3	11.3	14.2	52.1	20.1
Prop In Lane	1.00		1.00	0.19		1.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	315	374		393	0	317	1048	1427	1500	229	1599	713
V/C Ratio(X)	0.83	0.12		0.08	0.00	0.04	0.67	0.40	0.40	0.07	0.98	0.52
Avail Cap(c_a), veh/h	315	374		393	0	317	1048	1427	1500	229	1599	713
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)	0.89	0.89	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	39.4	0.0	39.1	0.0	38.7	36.6	3.4	3.4	25.8	32.5	23.7
Incr Delay (d2), s/veh	15.4	0.1	0.0	0.1	0.0	0.0	1.7	0.8	0.8	0.6	18.2	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.8	2.0	0.0	1.4	0.0	0.5	14.3	6.2	6.5	0.7	34.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	39.5	0.0	39.2	0.0	38.7	38.3	4.3	4.2	26.4	50.7	26.4
LnGrp LOS	E	D		D	A	D	D	A	A	C	D	C
Approach Vol, veh/h		308	A		44			1886			1954	
Approach Delay, s/veh		60.8			39.0			17.0			45.9	
Approach LOS		E			D			B			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		102.4		30.0	42.4	60.0		30.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		6.0				
Max Green Setting (Gmax), s		84.0		24.0	25.0	* 54		24.0				
Max Q Clear Time (g_c+I1), s		13.3		26.0	23.5	54.1		3.7				
Green Ext Time (p_c), s		11.0		0.0	0.5	0.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			33.9									
HCM 6th LOS			C									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

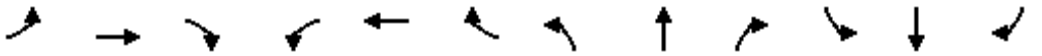
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2239	138	124	2093	0	208
Future Vol, veh/h	2239	138	124	2093	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	2488	153	138	2326	0	231

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2641	0	-	1244
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	416	-	0	*394
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	416	-	-	*394
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	26.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	416	-
HCM Lane V/C Ratio	0.587	-	-	0.331	-
HCM Control Delay (s)	26.3	-	-	17.9	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	3.6	-	-	1.4	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	2	209	73	5	108	180	1059	53	74	1511	185
Future Volume (veh/h)	246	2	209	73	5	108	180	1059	53	74	1511	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	273	2	232	81	6	120	200	1177	59	82	1679	206
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	447	361	306	262	174	147	302	1829	92	259	1772	790
Arrive On Green	0.15	0.19	0.19	0.05	0.09	0.09	0.07	0.53	0.53	0.08	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	3444	173	1781	3554	1585
Grp Volume(v), veh/h	273	2	232	81	6	120	200	607	629	82	1679	206
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1777	1839	1781	1777	1585
Q Serve(g_s), s	16.0	0.1	16.6	4.9	0.4	8.9	6.4	29.2	29.2	2.7	2.8	0.1
Cycle Q Clear(g_c), s	16.0	0.1	16.6	4.9	0.4	8.9	6.4	29.2	29.2	2.7	2.8	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	447	361	306	262	174	147	302	944	977	259	1772	790
V/C Ratio(X)	0.61	0.01	0.76	0.31	0.03	0.81	0.66	0.64	0.64	0.32	0.95	0.26
Avail Cap(c_a), veh/h	530	608	515	271	343	291	353	944	977	323	1772	790
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.43	0.43	0.43
Uniform Delay (d), s/veh	38.5	39.1	45.8	45.8	49.5	53.4	12.4	20.0	20.0	16.0	0.1	0.1
Incr Delay (d2), s/veh	1.5	0.0	3.8	0.7	0.1	10.3	3.7	3.4	3.3	0.3	6.2	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(95%),veh/ln	11.5	0.1	11.1	4.0	0.3	7.1	5.0	18.2	18.7	1.9	2.9	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.0	39.1	49.6	46.4	49.6	63.7	16.1	23.4	23.3	16.3	6.3	0.4
LnGrp LOS	D	D	D	D	D	E	B	C	C	B	A	A
Approach Vol, veh/h		507			207			1436			1967	
Approach Delay, s/veh		44.4			56.5			22.3			6.1	
Approach LOS		D			E			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	69.7	11.4	29.2	13.6	65.8	23.4	17.2
Change Period (Y+Rc), s	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
Max Green Setting (Gmax), s	9.0	43.0	7.0	39.0	12.0	40.0	24.0	22.0
Max Q Clear Time (g_c+I1), s	4.7	31.2	6.9	18.6	8.4	4.8	18.0	10.9
Green Ext Time (p_c), s	0.1	6.1	0.0	0.7	0.2	19.2	0.4	0.3

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

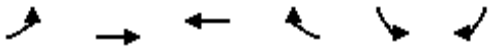
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	1593	65	29	1304
Future Vol, veh/h	0	25	1593	65	29	1304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	28	1770	72	32	1449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	885	0	0	1842	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	288	-	-	335	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	288	-	-	335	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.4
HCM LOS	C		

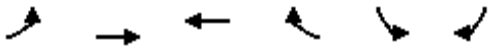
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	288	335	-
HCM Lane V/C Ratio	-	-	0.096	0.096	-
HCM Control Delay (s)	-	-	18.8	16.9	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	209	1552	1508	40	15	150
Future Volume (veh/h)	209	1552	1508	40	15	150
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1900	1885	1870	1870	1900	1885
Adj Flow Rate, veh/h	225	1669	1639	43	19	190
Peak Hour Factor	0.93	0.93	0.92	0.92	0.79	0.79
Percent Heavy Veh, %	0	1	2	2	0	1
Cap, veh/h	268	2388	1862	49	382	337
Arrive On Green	0.08	0.67	0.53	0.53	0.21	0.21
Sat Flow, veh/h	1810	3676	3631	93	1810	1598
Grp Volume(v), veh/h	225	1669	821	861	19	190
Grp Sat Flow(s),veh/h/ln	1810	1791	1777	1854	1810	1598
Q Serve(g_s), s	5.2	26.2	36.6	37.0	0.8	9.6
Cycle Q Clear(g_c), s	5.2	26.2	36.6	37.0	0.8	9.6
Prop In Lane	1.00			0.05	1.00	1.00
Lane Grp Cap(c), veh/h	268	2388	935	976	382	337
V/C Ratio(X)	0.84	0.70	0.88	0.88	0.05	0.56
Avail Cap(c_a), veh/h	476	2388	935	976	382	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.33	0.33	1.00	1.00
Uniform Delay (d), s/veh	21.2	9.4	18.8	18.8	28.3	31.8
Incr Delay (d2), s/veh	6.9	1.7	4.2	4.2	0.2	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	12.7	17.3	18.0	0.6	14.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.1	11.1	23.0	23.1	28.5	38.4
LnGrp LOS	C	B	C	C	C	D
Approach Vol, veh/h		1894	1682		209	
Approach Delay, s/veh		13.1	23.0		37.5	
Approach LOS		B	C		D	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		66.0		24.0	12.6	53.4
Change Period (Y+Rc), s		6.0		5.0	5.0	6.0
Max Green Setting (Gmax), s		60.0		19.0	18.0	37.0
Max Q Clear Time (g_c+I1), s		28.2		11.6	7.2	39.0
Green Ext Time (p_c), s		15.7		0.4	0.4	0.0

Intersection Summary		
HCM 6th Ctrl Delay		18.9
HCM 6th LOS		B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	289	1278	1238	379	526	310
Future Volume (veh/h)	289	1278	1238	379	526	310
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	321	1420	1376	421	584	344
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	570	2588	1392	621	594	528
Arrive On Green	0.29	0.73	0.39	0.39	0.33	0.33
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	321	1420	1376	421	584	344
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	13.9	21.7	46.1	26.4	39.0	22.2
Cycle Q Clear(g_c), s	13.9	21.7	46.1	26.4	39.0	22.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	570	2588	1392	621	594	528
V/C Ratio(X)	0.56	0.55	0.99	0.68	0.98	0.65
Avail Cap(c_a), veh/h	570	2588	1392	621	594	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	7.4	36.2	30.2	39.7	34.1
Incr Delay (d2), s/veh	0.8	0.6	21.6	5.9	33.1	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.3	10.2	30.8	15.9	30.0	27.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.0	7.9	57.8	36.1	72.8	40.2
LnGrp LOS	D	A	E	D	E	D
Approach Vol, veh/h		1741	1797		928	
Approach Delay, s/veh		12.9	52.7		60.7	
Approach LOS		B	D		E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		93.4		45.0	40.4	53.0
Change Period (Y+Rc), s		6.0		5.0	6.0	* 6
Max Green Setting (Gmax), s		69.0		40.0	17.0	* 47
Max Q Clear Time (g_c+I1), s		23.7		41.0	15.9	48.1
Green Ext Time (p_c), s		13.8		0.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	300	1009	83	403	1421
Future Volume (veh/h)	60	300	1009	83	403	1421
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	326	1097	90	438	1545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	376	335	1562	697	475	2369
Arrive On Green	0.21	0.21	0.44	0.44	0.17	0.67
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	65	326	1097	90	438	1545
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.7	18.4	22.5	3.0	13.0	23.1
Cycle Q Clear(g_c), s	2.7	18.4	22.5	3.0	13.0	23.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	376	335	1562	697	475	2369
V/C Ratio(X)	0.17	0.97	0.70	0.13	0.92	0.65
Avail Cap(c_a), veh/h	376	335	1562	697	526	2369
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	29.1	35.3	20.4	15.0	19.3	8.8
Incr Delay (d2), s/veh	0.2	42.1	2.7	0.4	20.8	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	16.2	14.4	2.0	12.0	12.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.3	77.4	23.1	15.4	40.1	10.3
LnGrp LOS	C	E	C	B	D	B
Approach Vol, veh/h	391		1187			1983
Approach Delay, s/veh	69.4		22.5			16.8
Approach LOS	E		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.4	45.6			66.0	24.0
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	18.0	37.0			60.0	19.0
Max Q Clear Time (g_c+I1), s	15.0	24.5			25.1	20.4
Green Ext Time (p_c), s	0.5	6.4			16.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	60	300	1009	83	403	1421
Future Volume (veh/h)	60	300	1009	83	403	1421
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	65	326	1097	90	438	1545
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	339	540	1870	834	518	2551
Arrive On Green	0.19	0.19	0.53	0.53	0.15	0.72
Sat Flow, veh/h	1781	1585	3647	1585	3456	3647
Grp Volume(v), veh/h	65	326	1097	90	438	1545
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1728	1777
Q Serve(g_s), s	3.7	20.5	25.4	3.4	14.8	26.0
Cycle Q Clear(g_c), s	3.7	20.5	25.4	3.4	14.8	26.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	339	540	1870	834	518	2551
V/C Ratio(X)	0.19	0.60	0.59	0.11	0.84	0.61
Avail Cap(c_a), veh/h	371	568	1870	834	778	2551
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	40.8	32.9	19.5	14.3	49.6	8.5
Incr Delay (d2), s/veh	0.3	1.7	1.4	0.3	5.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	12.7	15.9	2.3	11.1	14.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.1	34.5	20.8	14.5	55.2	9.5
LnGrp LOS	D	C	C	B	E	A
Approach Vol, veh/h	391		1187			1983
Approach Delay, s/veh	35.6		20.4			19.6
Approach LOS	D		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	23.0	69.1			92.1	27.9
Change Period (Y+Rc), s	5.0	6.0			6.0	5.0
Max Green Setting (Gmax), s	27.0	52.0			84.0	25.0
Max Q Clear Time (g_c+I1), s	16.8	27.4			28.0	22.5
Green Ext Time (p_c), s	1.2	9.3			19.7	0.4

Intersection Summary		
HCM 6th Ctrl Delay		21.6
HCM 6th LOS		C

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	28	6	2	9	6	55	4	910	17	93	1109	47
Future Vol, veh/h	28	6	2	9	6	55	4	910	17	93	1109	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	7	2	10	7	60	4	989	18	101	1205	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1939	2448	628	1814	2464	504	1256	0	0	1007	0	0
Stage 1	1433	1433	-	1006	1006	-	-	-	-	-	-	-
Stage 2	506	1015	-	808	1458	-	-	-	-	-	-	-
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	39	31	426	49	30	513	550	-	-	684	-	-
Stage 1	141	198	-	258	317	-	-	-	-	-	-	-
Stage 2	517	314	-	341	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 24	26	426	35	25	513	550	-	-	684	-	-
Mov Cap-2 Maneuver	~ 24	26	-	35	25	-	-	-	-	-	-	-
Stage 1	140	169	-	256	315	-	-	-	-	-	-	-
Stage 2	444	312	-	278	164	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 583.7	81.7	0	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	550	-	-	26	116	684	-	-
HCM Lane V/C Ratio	0.008	-	-	1.505	0.656	0.148	-	-
HCM Control Delay (s)	11.6	-	-	$ 583.7	81.7	11.2	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4.7	3.4	0.5	-	-

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

APPENDIX C. QUEUE ANALYSIS WORKSHEETS

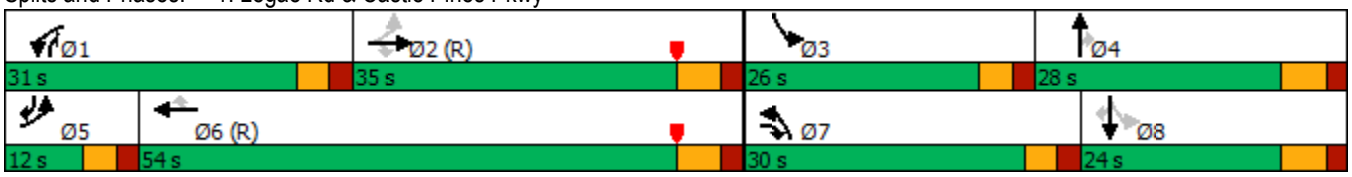
- 2040 Total Traffic Queues C-1
- 2040 Total Traffic Queues with High School C-39

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1242	236	505	505	19	211	32	446	45	17	30
Future Volume (vph)	55	1242	236	505	505	19	211	32	446	45	17	30
Lane Group Flow (vph)	59	1321	251	549	549	21	271	41	572	79	30	53
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5
Permitted Phases	2		2			6			4	8		8
Detector Phase	5	2	7	1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	10.5	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	10.5
Total Split (s)	12.0	35.0	30.0	31.0	54.0	54.0	30.0	28.0	31.0	26.0	24.0	12.0
Total Split (%)	10.0%	29.2%	25.0%	25.8%	45.0%	45.0%	25.0%	23.3%	25.8%	21.7%	20.0%	10.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	None
v/c Ratio	0.13	0.87	0.24	0.75	0.25	0.02	0.57	0.22	0.72	0.37	0.26	0.17
Control Delay	11.6	41.2	3.2	53.2	16.3	0.2	53.1	51.0	17.5	42.8	58.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	41.2	3.2	53.2	16.3	0.2	53.1	51.0	17.5	42.8	58.4	1.2
Queue Length 50th (ft)	14	504	7	210	95	0	104	30	160	49	23	0
Queue Length 95th (ft)	34	#818	51	224	233	m1	122	54	166	52	33	0
Internal Link Dist (ft)		726			1593			476			245	
Turn Bay Length (ft)	200		240	400		80	150			50		50
Base Capacity (vph)	460	1516	1133	758	2156	940	708	348	800	383	285	318
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.87	0.22	0.72	0.25	0.02	0.38	0.12	0.71	0.21	0.11	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Legae Rd & Castle Pines Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	1706	63	221	976	47	2	182	24	2
Future Volume (vph)	6	1706	63	221	976	47	2	182	24	2
Lane Group Flow (vph)	6	1815	67	248	1124	0	60	225	0	78
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2		1	6		4	1		8
Permitted Phases	2		2	6		4		4	8	
Detector Phase	5	2	2	1	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	23.0	24.0	24.0	24.0	23.0	24.0	24.0
Total Split (s)	12.0	65.0	65.0	23.0	76.0	32.0	32.0	23.0	32.0	32.0
Total Split (%)	10.0%	54.2%	54.2%	19.2%	63.3%	26.7%	26.7%	19.2%	26.7%	26.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		6.0	5.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	C-Max	Max	C-Max	None	None	Max	None	None
v/c Ratio	0.02	1.04	0.08	0.42	0.39		0.52	0.32		0.51
Control Delay	8.8	58.5	1.1	27.3	4.3		66.9	15.9		44.7
Queue Delay	0.0	10.9	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	8.8	69.5	1.1	27.3	4.4		66.9	15.9		44.7
Queue Length 50th (ft)	2	~806	6	108	72		45	70		36
Queue Length 95th (ft)	m1	#956	m0	m203	173		78	110		44
Internal Link Dist (ft)		1593			538		317			183
Turn Bay Length (ft)	250		185	385						
Base Capacity (vph)	311	1740	815	589	2896		282	714		331
Starvation Cap Reductn	0	0	0	0	165		0	0		0
Spillback Cap Reductn	0	45	0	0	0		0	1		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	1.07	0.08	0.42	0.41		0.21	0.32		0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 56 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Village Square Dr/Charter Oaks Dr & Castle Pines Pkwy

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	20	1765	275	1123	86	4	261	171	22	53
Future Volume (vph)	20	1765	275	1123	86	4	261	171	22	53
Lane Group Flow (vph)	22	1995	306	1282	102	5	311	219	28	68
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	1	6	3	8	1	7	4	5
Permitted Phases	2		6		8		8	4		4
Detector Phase	5	2	1	6	3	8	1	7	4	5
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	24.0	10.5	24.0	10.0	10.5	24.0	10.0
Total Split (s)	12.0	50.0	30.0	68.0	12.0	28.0	30.0	12.0	28.0	12.0
Total Split (%)	10.0%	41.7%	25.0%	56.7%	10.0%	23.3%	25.0%	10.0%	23.3%	10.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.07	0.73	0.74	0.37	0.77	0.07	0.77	1.12	0.26	0.23
Control Delay	6.3	17.8	43.6	9.3	86.7	54.5	44.0	146.0	58.9	2.7
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	18.0	43.6	9.3	86.7	54.5	44.0	146.0	58.9	2.7
Queue Length 50th (ft)	5	204	201	139	~82	4	180	164	21	0
Queue Length 95th (ft)	m5	m245	295	155	113	15	202	#214	44	0
Internal Link Dist (ft)		538		666		221			315	
Turn Bay Length (ft)	125		390				100			75
Base Capacity (vph)	316	2743	457	3450	133	232	444	196	319	313
Starvation Cap Reductn	0	164	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	37	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.77	0.67	0.37	0.77	0.02	0.70	1.12	0.09	0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

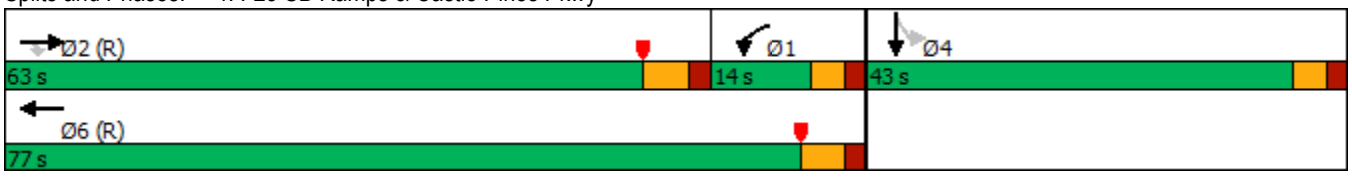
Splits and Phases: 3: Debbie Ln & Castle Pines Pkwy

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1430	767	262	1306	1066	23	422
Future Volume (vph)	1430	767	262	1306	1066	23	422
Lane Group Flow (vph)	1521	816	301	1501	917	461	534
Turn Type	NA	Perm	Prot	NA	Perm	NA	Free
Protected Phases	2		1	6		4	
Permitted Phases		2			4		Free
Detector Phase	2	2	1	6	4	4	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	10.0	24.0	23.0	23.0	
Total Split (s)	63.0	63.0	14.0	77.0	43.0	43.0	
Total Split (%)	52.5%	52.5%	11.7%	64.2%	35.8%	35.8%	
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	
v/c Ratio	0.90	0.76	1.16	0.73	1.05	1.04	0.35
Control Delay	24.9	8.2	143.5	14.3	84.2	94.2	0.7
Queue Delay	0.3	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	9.2	143.5	14.3	84.2	94.2	0.7
Queue Length 50th (ft)	407	22	~141	356	~424	~423	0
Queue Length 95th (ft)	m259	m122	#223	414	#445	#523	0
Internal Link Dist (ft)	666			623		312	
Turn Bay Length (ft)			515				
Base Capacity (vph)	1697	1080	260	2053	874	443	1509
Starvation Cap Reductn	18	91	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.83	1.16	0.73	1.05	1.04	0.35

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: I-25 SB Ramps & Castle Pines Pkwy

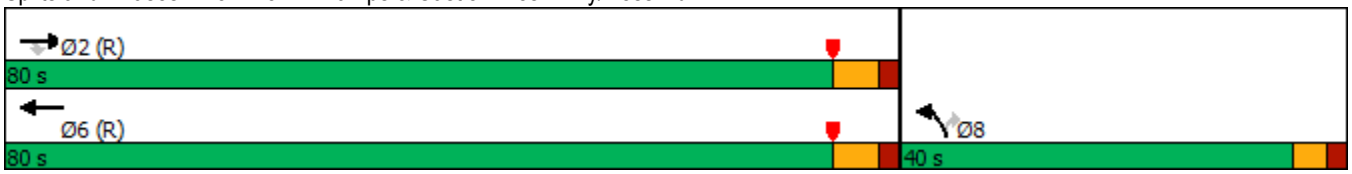


Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	1698	798	2157	439	227
Future Volume (vph)	1698	798	2157	439	227
Lane Group Flow (vph)	1887	887	2345	510	264
Turn Type	NA	Perm	NA	Prot	Perm
Protected Phases	2		6	8	
Permitted Phases		2			8
Detector Phase	2	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	23.0	23.0
Total Split (s)	80.0	80.0	80.0	40.0	40.0
Total Split (%)	66.7%	66.7%	66.7%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.0	5.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.53	0.63	0.65	0.76	0.47
Control Delay	4.8	1.1	1.8	52.6	39.6
Queue Delay	0.0	0.5	0.1	0.0	0.0
Total Delay	4.8	1.6	1.9	52.6	39.6
Queue Length 50th (ft)	54	0	36	192	91
Queue Length 95th (ft)	m193	m9	73	225	122
Internal Link Dist (ft)	132		479	705	
Turn Bay Length (ft)				450	450
Base Capacity (vph)	3567	1402	3601	982	810
Starvation Cap Reductn	0	185	304	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.73	0.71	0.52	0.33

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 67 (56%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: I-25 NB Ramps & Castle Pines Pkwy/Hess Rd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	178	1747	2017	196	157	140
Future Volume (vph)	178	1747	2017	196	157	140
Lane Group Flow (vph)	223	2184	2689	261	191	171
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	10.0	94.0	84.0	84.0	26.0	26.0
Total Split (%)	8.3%	78.3%	70.0%	70.0%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	1.56	0.60	0.81	0.26	0.61	0.54
Control Delay	316.1	4.6	6.4	0.5	54.8	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	316.1	4.6	6.4	0.5	54.8	37.0
Queue Length 50th (ft)	~127	115	197	0	138	81
Queue Length 95th (ft)	#179	107	77	m0	195	135
Internal Link Dist (ft)		479	312		681	
Turn Bay Length (ft)	325			250		450
Base Capacity (vph)	143	3657	3305	1008	315	317
Starvation Cap Reductn	0	65	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.56	0.61	0.81	0.26	0.61	0.54

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 61 (51%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

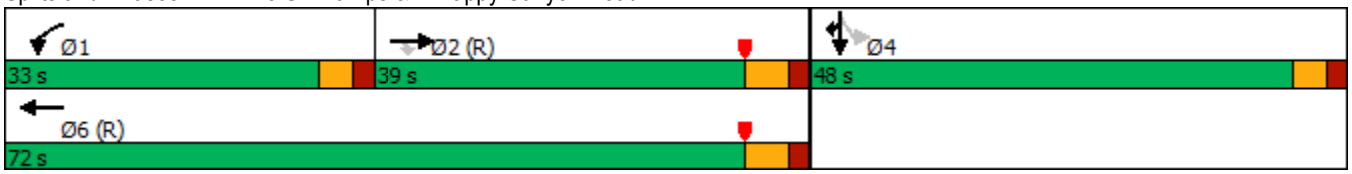
Splits and Phases: 6: Hess Rd & Havana St

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	602	310	495	477	362	5	625
Future Volume (vph)	602	310	495	477	362	5	625
Lane Group Flow (vph)	662	341	556	536	208	205	702
Turn Type	NA	Perm	Prot	NA	Perm	NA	Prot
Protected Phases	2		1	6		4	4
Permitted Phases		2			4		
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.5	24.0	23.5	23.5	23.5
Total Split (s)	39.0	39.0	33.0	72.0	48.0	48.0	48.0
Total Split (%)	32.5%	32.5%	27.5%	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Max	Max	Max
v/c Ratio	0.61	0.46	0.80	0.31	0.37	0.36	0.71
Control Delay	38.8	5.8	49.2	4.0	30.8	30.7	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	5.8	49.2	4.0	30.8	30.7	37.9
Queue Length 50th (ft)	230	0	215	46	124	122	263
Queue Length 95th (ft)	309	71	m230	m54	192	189	336
Internal Link Dist (ft)	345			368		549	
Turn Bay Length (ft)		250	175				
Base Capacity (vph)	1085	735	817	1711	569	568	989
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.46	0.68	0.31	0.37	0.36	0.71

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: I-25 SB Ramps & E Happy Canyon Road

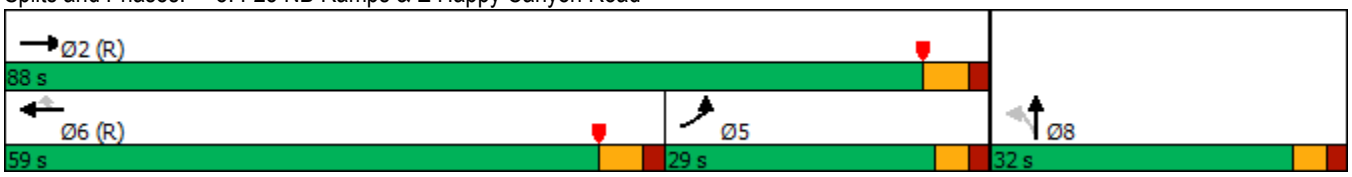


Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	NBR
Lane Configurations							
Traffic Volume (vph)	590	374	522	765	450	5	446
Future Volume (vph)	590	374	522	765	450	5	446
Lane Group Flow (vph)	634	402	614	900	284	278	551
Turn Type	Prot	NA	NA	Perm	Perm	NA	Free
Protected Phases	5	2	6			8	
Permitted Phases				6	8		Free
Detector Phase	5	2	6	6	8	8	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5	
Total Split (s)	29.0	88.0	59.0	59.0	32.0	32.0	
Total Split (%)	24.2%	73.3%	49.2%	49.2%	26.7%	26.7%	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	
Lead/Lag	Lag		Lead	Lead			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	
v/c Ratio	0.93	0.18	0.39	0.87	0.87	0.85	0.37
Control Delay	49.0	3.0	7.6	17.8	71.5	69.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.0	3.0	7.6	17.8	71.5	69.0	0.7
Queue Length 50th (ft)	209	16	48	231	224	218	0
Queue Length 95th (ft)	#353	33	m64	225	#322	#311	0
Internal Link Dist (ft)		368	3425			459	
Turn Bay Length (ft)	200			250			250
Base Capacity (vph)	680	2202	1594	1034	326	326	1509
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.18	0.39	0.87	0.87	0.85	0.37

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: I-25 NB Ramps & E Happy Canyon Road

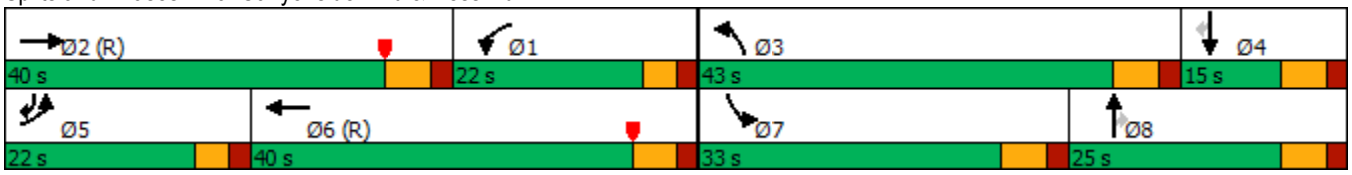


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	277	664	758	413	836	1373	120	430	66	72	144
Future Volume (vph)	277	664	758	413	836	1373	120	430	66	72	144
Lane Group Flow (vph)	308	738	842	459	1060	1526	133	478	73	80	160
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6	3	8		7	4	5
Permitted Phases			Free					8			4
Detector Phase	5	2		1	6	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0		10.0	24.0	11.0	24.0	24.0	11.0	24.0	10.0
Total Split (s)	22.0	40.0		22.0	40.0	43.0	25.0	25.0	33.0	15.0	22.0
Total Split (%)	18.3%	33.3%		18.3%	33.3%	35.8%	20.8%	20.8%	27.5%	12.5%	18.3%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None	None	None	None	None
v/c Ratio	0.71	0.48	0.52	0.93	0.65	0.99	0.24	0.60	0.48	0.61	0.32
Control Delay	53.8	31.2	1.4	76.7	37.6	64.0	37.3	9.8	62.1	73.7	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	31.2	1.4	76.7	37.6	64.0	37.3	9.8	62.1	73.7	4.3
Queue Length 50th (ft)	118	175	12	183	264	424	74	83	55	61	0
Queue Length 95th (ft)	167	224	19	#281	321	m#485	m86	m104	101	#121	33
Internal Link Dist (ft)		805			502		824			444	
Turn Bay Length (ft)	250		250	250		250		250			
Base Capacity (vph)	486	1538	1615	496	1627	1538	545	801	398	139	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.48	0.52	0.93	0.65	0.99	0.24	0.60	0.18	0.58	0.30

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 91 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Canyonside Blvd & Hess Rd

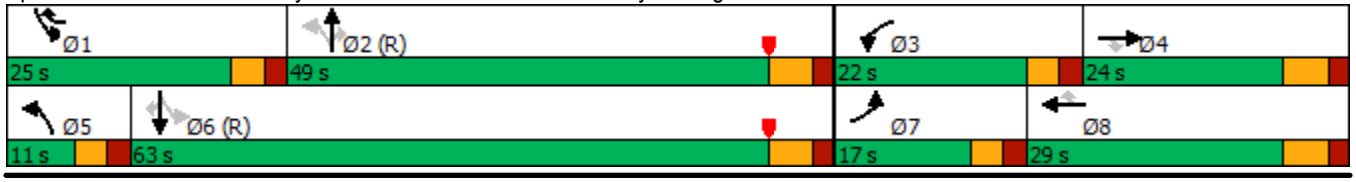


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	7	32	47	9	410	81	1376	47	240	772	231
Future Volume (vph)	137	7	32	47	9	410	81	1376	47	240	772	231
Lane Group Flow (vph)	152	8	36	52	10	456	90	1529	52	267	858	257
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	24.0	10.5	24.0	24.0
Total Split (s)	17.0	24.0	24.0	22.0	29.0	25.0	11.0	49.0	49.0	25.0	63.0	63.0
Total Split (%)	14.2%	20.0%	20.0%	18.3%	24.2%	20.8%	9.2%	40.8%	40.8%	20.8%	52.5%	52.5%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.37	0.08	0.15	0.38	0.10	0.87	0.23	0.97	0.07	0.48	0.37	0.23
Control Delay	50.4	55.6	1.3	59.9	56.0	50.1	11.3	43.0	0.2	20.8	8.5	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	55.6	1.3	59.9	56.0	50.1	11.3	43.0	0.2	20.8	8.5	1.3
Queue Length 50th (ft)	53	6	0	39	8	280	37	~738	0	79	103	0
Queue Length 95th (ft)	92	23	0	79	26	360	m25	#907	m0	m127	m162	m18
Internal Link Dist (ft)		373			367			826			824	
Turn Bay Length (ft)							200		200	200		200
Base Capacity (vph)	456	279	376	250	357	523	386	1581	797	557	2347	1136
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.03	0.10	0.21	0.03	0.87	0.23	0.97	0.07	0.48	0.37	0.23

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Canyonside Blvd & PA-2 E Access/Canyon Forge Dr



Intersection	
Int Delay, s/veh	2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	238	1020	140	0	1367
Future Vol, veh/h	0	238	1020	140	0	1367
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	264	1133	156	0	1519

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	567	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	467	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	467	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	22.3	0	0
HCM LOS	C		

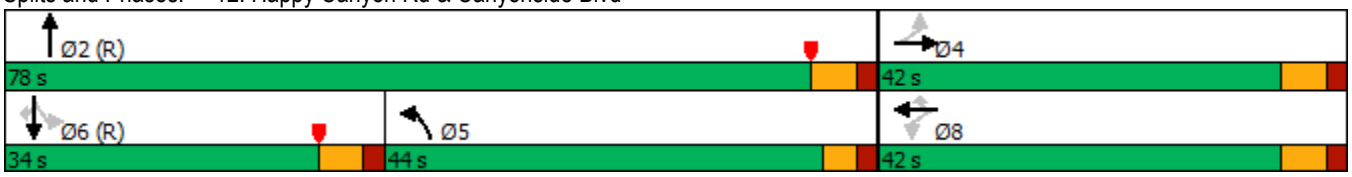
Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	467	-
HCM Lane V/C Ratio	-	0.566	-
HCM Control Delay (s)	-	22.3	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	3.4	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	351	16	423	5	40	13	904	955	6	518	248
Future Volume (vph)	351	16	423	5	40	13	904	955	6	518	248
Lane Group Flow (vph)	390	18	470	0	50	14	1004	1067	7	576	276
Turn Type	Perm	NA	Free	Perm	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases		4			8		5	2		6	
Permitted Phases	4		Free	8		8			6		6
Detector Phase	4	4		8	8	8	5	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	10.5	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0		42.0	42.0	42.0	44.0	78.0	34.0	34.0	34.0
Total Split (%)	35.0%	35.0%		35.0%	35.0%	35.0%	36.7%	65.0%	28.3%	28.3%	28.3%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0	6.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag							Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.97	0.03	0.30		0.09	0.03	0.90	0.50	0.11	0.69	0.47
Control Delay	76.9	26.8	0.5		31.0	0.1	50.7	14.6	41.8	47.0	7.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	26.8	0.5		31.0	0.1	50.7	14.6	41.8	47.0	7.3
Queue Length 50th (ft)	298	8	0		28	0	380	234	4	216	0
Queue Length 95th (ft)	#497	m22	0		59	0	#500	287	19	281	69
Internal Link Dist (ft)		3425			705			988		756	
Turn Bay Length (ft)	250		250			250	250		250		250
Base Capacity (vph)	404	558	1583		547	532	1115	2130	62	833	583
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.03	0.30		0.09	0.03	0.90	0.50	0.11	0.69	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Happy Canyon Rd & Canyonside Blvd



Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1623	281	140	2213	0	76
Future Vol, veh/h	1623	281	140	2213	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	1803	312	156	2459	0	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2115	0	-	902
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	412	-	0	*545
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	412	-	-	*545
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	545	-	-	412	-
HCM Lane V/C Ratio	0.155	-	-	0.378	-
HCM Control Delay (s)	12.8	-	-	18.9	-
HCM Lane LOS	B	-	-	C	-
HCM 95th %tile Q(veh)	0.5	-	-	1.7	-

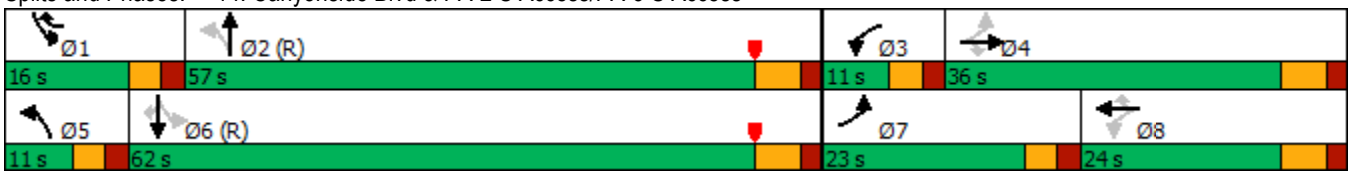
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	195	1	68	34	1	78	84	1231	92	629	130
Future Volume (vph)	195	1	68	34	1	78	84	1231	92	629	130
Lane Group Flow (vph)	217	1	76	38	1	87	93	1402	102	699	144
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	1	6	
Permitted Phases	4		4	8		8	2		6		6
Detector Phase	7	4	4	3	8	1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	10.5	24.0	24.0
Total Split (s)	23.0	36.0	36.0	11.0	24.0	16.0	11.0	57.0	16.0	62.0	62.0
Total Split (%)	19.2%	30.0%	30.0%	9.2%	20.0%	13.3%	9.2%	47.5%	13.3%	51.7%	51.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
v/c Ratio	0.79	0.01	0.29	0.35	0.01	0.35	0.17	0.63	0.38	0.31	0.13
Control Delay	68.3	48.0	5.0	56.4	55.0	6.8	5.7	16.4	19.3	9.5	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	48.0	5.0	56.4	55.0	6.8	5.7	16.4	19.3	9.5	0.7
Queue Length 50th (ft)	165	1	0	29	1	0	15	305	18	104	0
Queue Length 95th (ft)	224	6	15	52	7	23	42	540	84	115	6
Internal Link Dist (ft)		206			219			288		826	
Turn Bay Length (ft)							200		200		200
Base Capacity (vph)	289	465	484	110	279	285	537	2236	306	2283	1079
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.00	0.16	0.35	0.00	0.31	0.17	0.63	0.33	0.31	0.13

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 43 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 14: Canyonside Blvd & PA-2 S Access/PA-3 S Access



Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	1175	83	46	1367
Future Vol, veh/h	0	22	1175	83	46	1367
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	24	1306	92	51	1519

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	653	0	0	1398	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	410	-	-	495	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	410	-	-	495	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.4
HCM LOS	B		

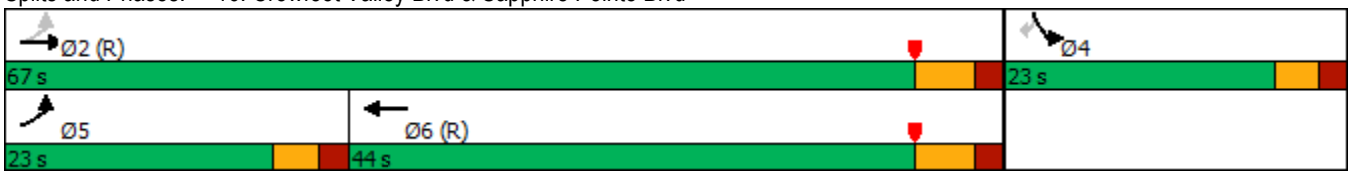
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	410	495	-
HCM Lane V/C Ratio	-	-	0.06	0.103	-
HCM Control Delay (s)	-	-	14.3	13.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.3	-

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	82	1132	1416	27	193
Future Volume (vph)	82	1132	1416	27	193
Lane Group Flow (vph)	86	1192	1700	30	217
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	24.0	24.0	23.5	23.5
Total Split (s)	23.0	67.0	44.0	23.0	23.0
Total Split (%)	25.6%	74.4%	48.9%	25.6%	25.6%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
v/c Ratio	0.40	0.51	0.84	0.09	0.44
Control Delay	12.2	8.1	22.4	30.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	8.1	22.4	30.2	7.6
Queue Length 50th (ft)	14	153	417	14	0
Queue Length 95th (ft)	40	197	480	37	55
Internal Link Dist (ft)		748	1670	1059	
Turn Bay Length (ft)	550				175
Base Capacity (vph)	419	2330	2012	347	493
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.51	0.84	0.09	0.44

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 16: Crowfoot Valley Blvd & Sapphire Pointe Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	234	925	1183	434	320	245
Future Volume (vph)	234	925	1183	434	320	245
Lane Group Flow (vph)	260	1028	1314	482	356	272
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	24.0	83.0	59.0	59.0	37.0	37.0
Total Split (%)	20.0%	69.2%	49.2%	49.2%	30.8%	30.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	0.83	0.45	0.80	0.55	0.75	0.44
Control Delay	50.0	11.6	32.9	13.0	51.9	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	11.6	32.9	13.0	51.9	6.4
Queue Length 50th (ft)	135	196	463	118	254	0
Queue Length 95th (ft)	#252	241	565	224	#369	65
Internal Link Dist (ft)		1670	1107		5393	
Turn Bay Length (ft)	550			150		
Base Capacity (vph)	348	2270	1636	872	472	621
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.45	0.80	0.55	0.75	0.44

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Crowfoot Valley Blvd & Canyonside Blvd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	204	1120	16	67	651
Future Volume (vph)	50	204	1120	16	67	651
Lane Group Flow (vph)	54	222	1217	17	73	708
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	24.0	24.0	10.5	24.0
Total Split (s)	25.0	25.0	53.0	53.0	12.0	65.0
Total Split (%)	27.8%	27.8%	58.9%	58.9%	13.3%	72.2%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	6.0	5.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	0.29	0.67	0.51	0.02	0.21	0.26
Control Delay	39.6	19.9	9.7	3.8	4.1	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	19.9	9.7	3.8	4.1	3.5
Queue Length 50th (ft)	29	21	164	0	6	42
Queue Length 95th (ft)	60	85	288	9	22	88
Internal Link Dist (ft)	1553		3773			1225
Turn Bay Length (ft)				200	200	
Base Capacity (vph)	393	494	2371	1065	367	2736
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.45	0.51	0.02	0.20	0.26

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 18: Canyonside Blvd & PA-13 Access

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	5	4	17	5	71	1	858	6	23	605	13
Future Vol, veh/h	38	5	4	17	5	71	1	858	6	23	605	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	5	4	18	5	77	1	933	7	25	658	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1186	1657	336	1321	1661	470	672	0	0	940	0	0
Stage 1	715	715	-	939	939	-	-	-	-	-	-	-
Stage 2	471	942	-	382	722	-	-	-	-	-	-	-
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	144	97	660	115	96	540	915	-	-	725	-	-
Stage 1	388	433	-	284	341	-	-	-	-	-	-	-
Stage 2	542	340	-	612	429	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	115	94	660	106	93	540	915	-	-	725	-	-
Mov Cap-2 Maneuver	115	94	-	106	93	-	-	-	-	-	-	-
Stage 1	388	418	-	284	341	-	-	-	-	-	-	-
Stage 2	457	340	-	579	414	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	54.9	26.2	0	0.4
HCM LOS	F	D		

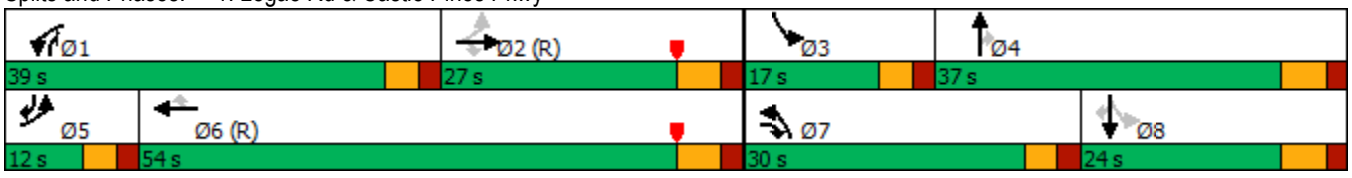
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	915	-	-	121	269	725	-	-
HCM Lane V/C Ratio	0.001	-	-	0.422	0.376	0.034	-	-
HCM Control Delay (s)	8.9	-	-	54.9	26.2	10.1	-	-
HCM Lane LOS	A	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.8	1.7	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	836	332	730	1418	23	610	26	642	128	43	66
Future Volume (vph)	51	836	332	730	1418	23	610	26	642	128	43	66
Lane Group Flow (vph)	54	889	353	793	1541	25	670	29	705	162	54	84
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5
Permitted Phases	2		2			6			4	8		8
Detector Phase	5	2	7	1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	10.0	24.0	24.0	10.0	24.0	10.0	10.0	24.0	10.0
Total Split (s)	12.0	27.0	30.0	39.0	54.0	54.0	30.0	37.0	39.0	17.0	24.0	12.0
Total Split (%)	10.0%	22.5%	25.0%	32.5%	45.0%	45.0%	25.0%	30.8%	32.5%	14.2%	20.0%	10.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	None
v/c Ratio	0.31	1.17	0.40	0.73	0.89	0.03	0.95	0.11	0.85	0.43	0.39	0.21
Control Delay	24.0	133.3	6.6	33.0	23.7	0.0	70.4	41.9	29.8	35.0	60.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	133.3	6.6	33.0	23.7	0.0	70.4	41.9	29.8	35.0	60.3	1.2
Queue Length 50th (ft)	17	~426	31	252	598	0	265	19	326	92	41	0
Queue Length 95th (ft)	38	#618	101	m262	m#814	m0	#381	45	450	123	71	0
Internal Link Dist (ft)		726			1593			476			245	
Turn Bay Length (ft)	200		240	400		80	150			50		50
Base Capacity (vph)	179	758	878	1079	1736	803	708	490	831	378	285	405
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.17	0.40	0.73	0.89	0.03	0.95	0.06	0.85	0.43	0.19	0.21

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Legae Rd & Castle Pines Pkwy

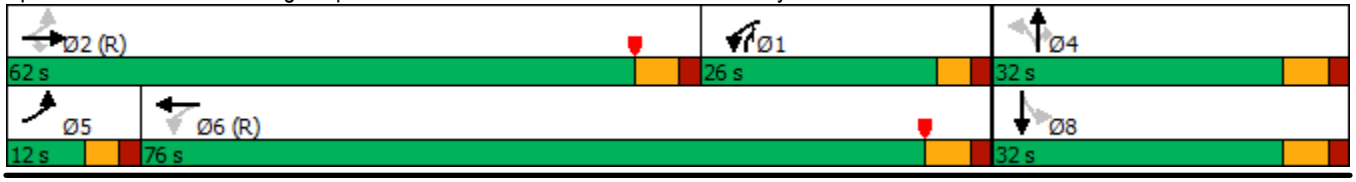


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1487	110	394	1945	118	8	269	28	18
Future Volume (vph)	32	1487	110	394	1945	118	8	269	28	18
Lane Group Flow (vph)	35	1634	121	443	2221	0	140	299	0	87
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2		1	6		4	1		8
Permitted Phases	2		2	6		4		4	8	
Detector Phase	5	2	2	1	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	24.0	24.0	10.5	24.0	24.0
Total Split (s)	12.0	62.0	62.0	26.0	76.0	32.0	32.0	26.0	32.0	32.0
Total Split (%)	10.0%	51.7%	51.7%	21.7%	63.3%	26.7%	26.7%	21.7%	26.7%	26.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		6.0	5.0		6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag			Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None
v/c Ratio	0.22	0.87	0.14	1.19	0.91		0.73	0.46		0.38
Control Delay	14.5	20.3	3.2	130.3	11.1		69.0	22.5		36.7
Queue Delay	0.0	1.0	0.0	0.0	0.2		0.0	0.0		0.0
Total Delay	14.5	21.3	3.2	130.3	11.2		69.0	22.5		36.7
Queue Length 50th (ft)	10	654	6	~370	376		105	129		45
Queue Length 95th (ft)	m12	m665	m4	#580	#1113		165	189		82
Internal Link Dist (ft)		1593			538		317			183
Turn Bay Length (ft)	250		185	385						
Base Capacity (vph)	166	1882	883	371	2432		275	647		317
Starvation Cap Reductn	0	0	0	0	14		0	0		0
Spillback Cap Reductn	0	87	0	0	0		0	2		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.21	0.91	0.14	1.19	0.92		0.51	0.46		0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Village Square Dr/Charter Oaks Dr & Castle Pines Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	34	1637	322	2268	115	14	260	193	14	52
Future Volume (vph)	34	1637	322	2268	115	14	260	193	14	52
Lane Group Flow (vph)	37	1882	362	2566	121	15	274	238	17	64
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	1	6	3	8	1	7	4	5
Permitted Phases	2		6		8		8	4		4
Detector Phase	5	2	1	6	3	8	1	7	4	5
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	24.0	10.0	24.0	10.0	10.0	24.0	10.0
Total Split (s)	10.0	53.0	28.0	71.0	16.0	21.0	28.0	18.0	23.0	10.0
Total Split (%)	8.3%	44.2%	23.3%	59.2%	13.3%	17.5%	23.3%	15.0%	19.2%	8.3%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.23	0.74	0.83	0.77	0.52	0.20	0.60	0.95	0.15	0.23
Control Delay	15.5	15.2	50.2	13.1	52.6	59.3	31.9	94.8	54.4	2.2
Queue Delay	0.0	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	15.9	50.2	13.2	52.6	59.3	31.9	94.8	54.4	2.2
Queue Length 50th (ft)	1	204	229	229	91	11	144	~235	13	0
Queue Length 95th (ft)	m5	#635	m328	421	132	34	194	221	32	0
Internal Link Dist (ft)		538		666		221			315	
Turn Bay Length (ft)	125		390				100			75
Base Capacity (vph)	161	2541	450	3330	232	158	470	250	246	277
Starvation Cap Reductn	0	300	0	97	0	0	0	0	0	0
Spillback Cap Reductn	0	77	0	91	0	0	1	0	0	2
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.84	0.80	0.79	0.52	0.09	0.58	0.95	0.07	0.23

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 91 (76%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

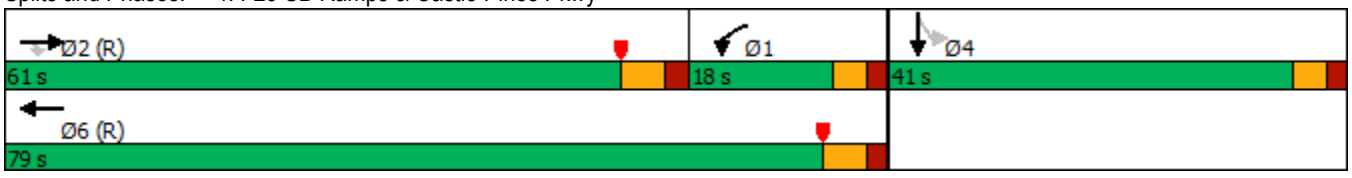
Splits and Phases: 3: Debbie Ln & Castle Pines Pkwy

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1365	725	213	1556	1097	54	1026
Future Volume (vph)	1365	725	213	1556	1097	54	1026
Lane Group Flow (vph)	1606	853	234	1710	853	426	1140
Turn Type	NA	Perm	Prot	NA	Perm	NA	Free
Protected Phases	2		1	6		4	
Permitted Phases		2			4		Free
Detector Phase	2	2	1	6	4	4	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	10.5	24.0	23.5	23.5	
Total Split (s)	61.0	61.0	18.0	79.0	41.0	41.0	
Total Split (%)	50.8%	50.8%	15.0%	65.8%	34.2%	34.2%	
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	
v/c Ratio	0.98	0.81	0.62	0.81	1.03	1.00	0.76
Control Delay	37.2	14.4	54.8	18.6	80.7	85.5	3.6
Queue Delay	0.5	0.9	0.0	0.3	0.0	0.0	0.1
Total Delay	37.7	15.3	54.8	18.9	80.7	85.5	3.7
Queue Length 50th (ft)	534	33	96	420	~388	361	0
Queue Length 95th (ft)	#390	m234	m129	617	#522	#597	0
Internal Link Dist (ft)	666			623		312	
Turn Bay Length (ft)			515				
Base Capacity (vph)	1638	1051	375	2111	828	427	1509
Starvation Cap Reductn	5	53	0	78	0	0	0
Spillback Cap Reductn	0	0	0	50	0	0	21
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.85	0.62	0.84	1.03	1.00	0.77

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 87 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: I-25 SB Ramps & Castle Pines Pkwy

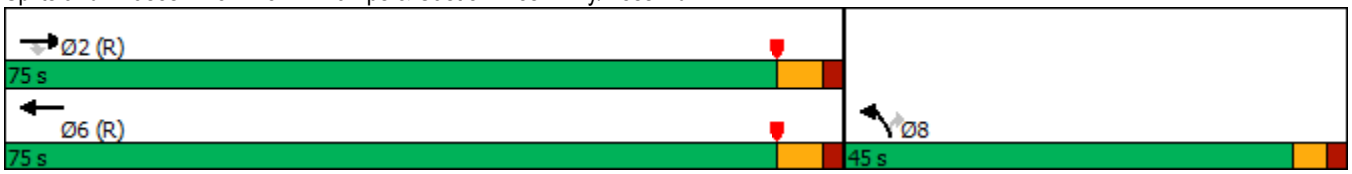


Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	2036	426	2102	745	243
Future Volume (vph)	2036	426	2102	745	243
Lane Group Flow (vph)	2166	453	2285	866	283
Turn Type	NA	Perm	NA	Prot	Perm
Protected Phases	2		6	8	
Permitted Phases		2			8
Detector Phase	2	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	23.5	23.5
Total Split (s)	75.0	75.0	75.0	45.0	45.0
Total Split (%)	62.5%	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.0	5.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.71	0.39	0.74	0.85	0.34
Control Delay	12.7	1.2	2.3	48.1	32.0
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	12.7	1.2	2.3	48.1	32.0
Queue Length 50th (ft)	308	13	33	320	92
Queue Length 95th (ft)	m376	m15	52	362	123
Internal Link Dist (ft)	132		479	705	
Turn Bay Length (ft)				450	450
Base Capacity (vph)	3053	1153	3083	1122	909
Starvation Cap Reductn	0	0	67	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.71	0.39	0.76	0.77	0.31

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 80 (67%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: I-25 NB Ramps & Castle Pines Pkwy/Hess Rd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	2158	1891	171	190	211
Future Volume (vph)	121	2158	1891	171	190	211
Lane Group Flow (vph)	142	2539	2125	192	250	278
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	25.0	93.0	68.0	68.0	27.0	27.0
Total Split (%)	20.8%	77.5%	56.7%	56.7%	22.5%	22.5%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	0.25	0.70	0.81	0.24	0.76	0.56
Control Delay	37.9	4.3	10.0	1.4	62.2	11.5
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay	37.9	4.4	10.0	1.4	62.2	11.5
Queue Length 50th (ft)	51	96	232	13	185	12
Queue Length 95th (ft)	m75	95	m249	m11	228	44
Internal Link Dist (ft)		479	312		681	
Turn Bay Length (ft)	325			250		450
Base Capacity (vph)	572	3616	2627	813	330	496
Starvation Cap Reductn	0	179	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.74	0.81	0.24	0.76	0.56

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 69 (58%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

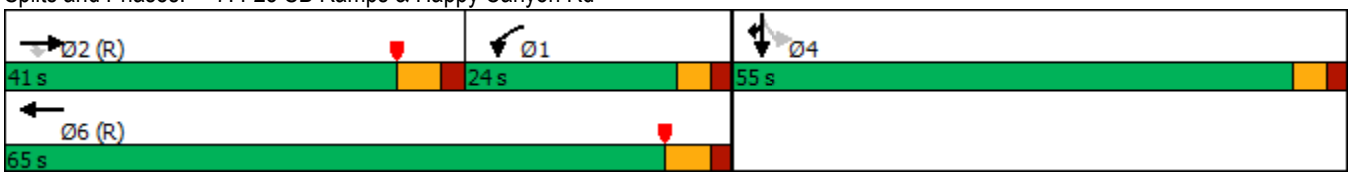
Splits and Phases: 6: Hess Rd & Havana St

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	796	625	490	635	772	5	825
Future Volume (vph)	796	625	490	635	772	5	825
Lane Group Flow (vph)	875	687	551	713	433	440	927
Turn Type	NA	Perm	Prot	NA	Perm	NA	Prot
Protected Phases	2		1	6		4	4
Permitted Phases		2			4		
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.5	24.0	23.5	23.5	23.5
Total Split (s)	41.0	41.0	24.0	65.0	55.0	55.0	55.0
Total Split (%)	34.2%	34.2%	20.0%	54.2%	45.8%	45.8%	45.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Max	Max	Max
v/c Ratio	0.86	0.72	0.99	0.47	0.66	0.66	0.81
Control Delay	49.7	7.3	86.0	33.1	33.8	34.2	37.4
Queue Delay	0.6	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	50.3	7.3	86.0	33.9	33.8	34.2	37.4
Queue Length 50th (ft)	336	0	198	228	278	285	352
Queue Length 95th (ft)	#423	104	m#309	m282	395	404	440
Internal Link Dist (ft)	337			370		549	
Turn Bay Length (ft)			175				
Base Capacity (vph)	1022	957	554	1530	661	662	1150
Starvation Cap Reductn	0	0	0	502	0	0	0
Spillback Cap Reductn	22	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.72	0.99	0.69	0.66	0.66	0.81

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: I-25 SB Ramps & Happy Canyon Rd



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	770	798	505	467	620	5	476
Future Volume (vph)	770	798	505	467	620	5	476
Lane Group Flow (vph)	828	858	594	549	382	389	588
Turn Type	Prot	NA	NA	Perm	Perm	NA	Free
Protected Phases	5	2	6			8	
Permitted Phases				6	8		Free
Detector Phase	5	2	6	6	8	8	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5	
Total Split (s)	44.0	78.0	34.0	34.0	42.0	42.0	
Total Split (%)	36.7%	65.0%	28.3%	28.3%	35.0%	35.0%	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	
Lead/Lag	Lag		Lead	Lead			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	
v/c Ratio	0.75	0.44	0.71	0.69	0.85	0.87	0.39
Control Delay	29.8	8.7	34.6	12.4	58.1	60.0	0.8
Queue Delay	1.7	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	9.2	34.6	12.4	58.1	60.0	0.8
Queue Length 50th (ft)	229	88	245	235	291	298	0
Queue Length 95th (ft)	m292	m138	m291	m279	#374	#398	0
Internal Link Dist (ft)		370	3404			459	
Turn Bay Length (ft)	200			250			
Base Capacity (vph)	1105	1933	842	793	448	448	1509
Starvation Cap Reductn	135	606	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.65	0.71	0.69	0.85	0.87	0.39

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

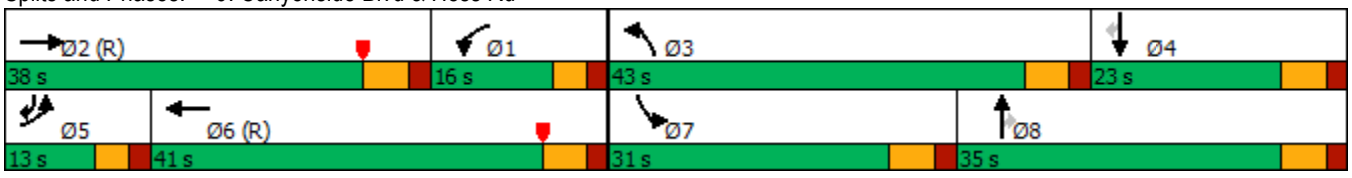
Splits and Phases: 8: I-25 NB Ramps & Happy Canyon Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	121	1193	1104	626	601	1381	201	399	104	216	204
Future Volume (vph)	121	1193	1104	626	601	1381	201	399	104	216	204
Lane Group Flow (vph)	132	1326	1227	696	715	1534	218	443	113	235	222
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6	3	8		7	4	5
Permitted Phases			Free					8			4
Detector Phase	5	2		1	6	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0		10.0	24.0	24.0	11.0	11.0	24.0	11.0	10.0
Total Split (s)	13.0	38.0		16.0	41.0	43.0	35.0	35.0	31.0	23.0	13.0
Total Split (%)	10.8%	31.7%		13.3%	34.2%	35.8%	29.2%	29.2%	25.8%	19.2%	10.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None	None	None	None	None
v/c Ratio	0.59	0.99	0.76	2.17	0.48	1.00	0.34	0.56	0.59	0.91	0.41
Control Delay	55.2	54.9	7.4	562.4	35.6	48.9	32.5	14.9	62.9	87.8	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	54.9	7.4	562.4	35.6	48.9	32.5	14.9	62.9	87.8	10.0
Queue Length 50th (ft)	52	376	542	~444	165	450	148	137	85	181	18
Queue Length 95th (ft)	m72	#488	397	#565	206	m#517	m185	m175	140	#329	83
Internal Link Dist (ft)		805			502		824			422	
Turn Bay Length (ft)	250		250	250		250		250			
Base Capacity (vph)	228	1342	1615	321	1492	1538	632	798	368	263	547
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.99	0.76	2.17	0.48	1.00	0.34	0.56	0.31	0.89	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Canyonside Blvd & Hess Rd

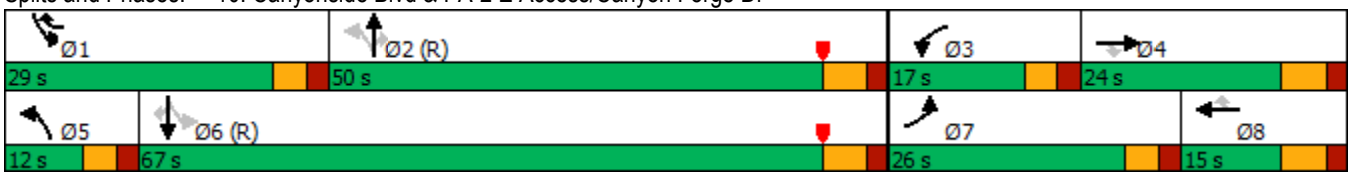


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	497	25	167	100	38	333	126	1151	69	383	1440	123
Future Volume (vph)	497	25	167	100	38	333	126	1151	69	383	1440	123
Lane Group Flow (vph)	552	28	186	111	42	370	140	1279	77	426	1600	137
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	24.0	10.5	24.0	24.0
Total Split (s)	26.0	24.0	24.0	17.0	15.0	29.0	12.0	50.0	50.0	29.0	67.0	67.0
Total Split (%)	21.7%	20.0%	20.0%	14.2%	12.5%	24.2%	10.0%	41.7%	41.7%	24.2%	55.8%	55.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
v/c Ratio	0.93	0.12	0.54	0.69	0.35	0.64	0.78	0.95	0.11	0.95	0.85	0.15
Control Delay	71.6	45.7	16.0	74.2	61.6	29.1	52.4	40.7	0.3	44.8	32.0	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.6	45.7	16.0	74.2	61.6	29.1	52.4	40.7	0.3	44.8	32.0	6.9
Queue Length 50th (ft)	219	19	15	84	32	165	61	525	0	286	618	15
Queue Length 95th (ft)	#322	47	84	#156	69	273	m#177	#655	m0	m#309	m550	m20
Internal Link Dist (ft)		373			367			826			824	
Turn Bay Length (ft)							200		200	200		200
Base Capacity (vph)	600	279	376	177	139	574	180	1349	732	448	1885	920
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.10	0.49	0.63	0.30	0.64	0.78	0.95	0.11	0.95	0.85	0.15

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Canyonside Blvd & PA-2 E Access/Canyon Forge Dr



Intersection	
Int Delay, s/veh	1.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	133	1489	207	0	1270
Future Vol, veh/h	0	133	1489	207	0	1270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	148	1654	230	0	1411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	827	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	315	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	315	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.1	0	0
HCM LOS	D		

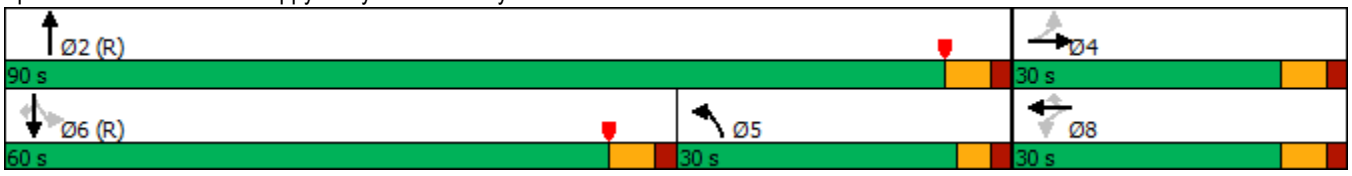
Minor Lane/Major Mvmt	NETNWLn1	SWT
Capacity (veh/h)	315	-
HCM Lane V/C Ratio	0.469	-
HCM Control Delay (s)	26.1	-
HCM Lane LOS	D	-
HCM 95th %tile Q(veh)	2.4	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	236	41	927	5	23	11	561	989	15	1347	333
Future Volume (vph)	236	41	927	5	23	11	561	989	15	1347	333
Lane Group Flow (vph)	262	46	1030	0	32	12	623	1105	17	1497	370
Turn Type	Perm	NA	Free	Perm	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases		4			8		5	2		6	
Permitted Phases	4		Free	8		8			6		6
Detector Phase	4	4		8	8	8	5	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	10.5	24.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0		30.0	30.0	30.0	30.0	90.0	60.0	60.0	60.0
Total Split (%)	25.0%	25.0%		25.0%	25.0%	25.0%	25.0%	75.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0	6.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag							Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.96	0.12	0.65		0.09	0.03	0.87	0.45	0.10	0.94	0.43
Control Delay	85.6	37.2	5.7		40.0	0.2	60.1	8.5	21.1	44.1	7.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	37.2	5.7		40.0	0.2	60.1	8.5	21.1	44.1	7.0
Queue Length 50th (ft)	182	23	240		20	0	242	176	7	569	39
Queue Length 95th (ft)	#367	50	371		49	0	#336	215	23	#733	108
Internal Link Dist (ft)		3404			715			940		753	
Turn Bay Length (ft)	250		250			250	250		250		250
Base Capacity (vph)	274	372	1583		357	382	715	2476	171	1593	867
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.12	0.65		0.09	0.03	0.87	0.45	0.10	0.94	0.43

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Happy Canyon Rd & Canyonside Blvd



Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2210	138	124	2062	0	208
Future Vol, veh/h	2210	138	124	2062	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	2456	153	138	2291	0	231

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2609	0	-	1228
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	450	-	0	*394
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	450	-	-	*394
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	26.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	450	-
HCM Lane V/C Ratio	0.587	-	-	0.306	-
HCM Control Delay (s)	26.3	-	-	16.5	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	3.6	-	-	1.3	-

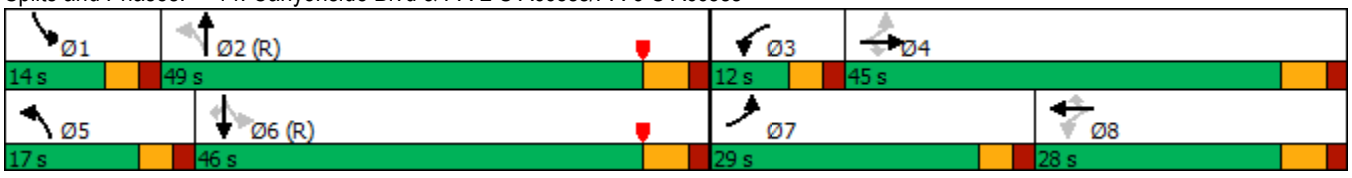
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	246	2	209	73	5	108	180	992	74	1448	185
Future Volume (vph)	246	2	209	73	5	108	180	992	74	1448	185
Lane Group Flow (vph)	273	2	232	81	6	120	200	1161	82	1609	206
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		8	2		6		6
Detector Phase	7	4	4	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	24.0	10.5	24.0	10.5	24.0	24.0
Total Split (s)	29.0	45.0	45.0	12.0	28.0	28.0	17.0	49.0	14.0	46.0	46.0
Total Split (%)	24.2%	37.5%	37.5%	10.0%	23.3%	23.3%	14.2%	40.8%	11.7%	38.3%	38.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
v/c Ratio	0.68	0.01	0.47	0.44	0.06	0.50	0.74	0.62	0.31	0.97	0.25
Control Delay	44.9	38.5	8.5	40.8	54.6	10.4	42.3	22.7	11.1	33.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	38.5	8.5	40.8	54.6	10.4	42.3	22.7	11.1	33.2	4.6
Queue Length 50th (ft)	175	1	0	46	5	0	98	337	17	~209	3
Queue Length 95th (ft)	255	9	66	84	19	25	177	454	m29	#915	m26
Internal Link Dist (ft)		206			219			288		826	
Turn Bay Length (ft)							200		200		200
Base Capacity (vph)	422	605	671	188	341	424	281	1884	289	1652	826
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.00	0.35	0.43	0.02	0.28	0.71	0.62	0.28	0.97	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Canyonside Blvd & PA-2 S Access/PA-3 S Access



Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	1557	65	29	1270
Future Vol, veh/h	0	25	1557	65	29	1270
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	28	1730	72	32	1411

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	865	0	0	1802	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	297	-	-	347	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	297	-	-	347	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.4
HCM LOS	C		

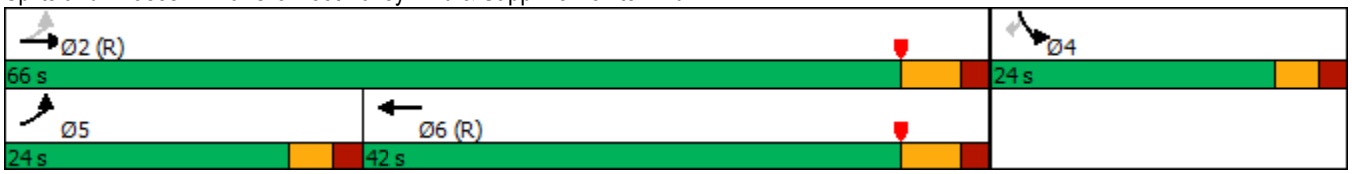
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	347	-
HCM Lane V/C Ratio	-	-	0.094	0.093	-
HCM Control Delay (s)	-	-	18.4	16.4	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	-

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	209	1526	1481	15	150
Future Volume (vph)	209	1526	1481	15	150
Lane Group Flow (vph)	225	1641	1653	19	190
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	24.0	24.0	23.5	23.5
Total Split (s)	24.0	66.0	42.0	24.0	24.0
Total Split (%)	26.7%	73.3%	46.7%	26.7%	26.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
v/c Ratio	0.71	0.69	0.97	0.05	0.39
Control Delay	28.6	11.2	40.6	28.9	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	11.2	40.6	28.9	7.3
Queue Length 50th (ft)	68	266	453	9	0
Queue Length 95th (ft)	137	339	#717	24	35
Internal Link Dist (ft)		748	1708	1059	
Turn Bay Length (ft)	550				175
Base Capacity (vph)	454	2382	1702	381	487
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.69	0.97	0.05	0.39

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Crowfoot Valley Blvd & Sapphire Pointe Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	263	1278	1238	370	517	283
Future Volume (vph)	263	1278	1238	370	517	283
Lane Group Flow (vph)	292	1420	1376	411	574	314
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	22.0	75.0	53.0	53.0	45.0	45.0
Total Split (%)	18.3%	62.5%	44.2%	44.2%	37.5%	37.5%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	0.94	0.70	0.99	0.55	0.97	0.44
Control Delay	71.5	20.4	57.8	17.3	71.0	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.5	20.4	57.8	17.3	71.0	7.7
Queue Length 50th (ft)	173	390	551	124	437	23
Queue Length 95th (ft)	#343	472	#717	226	#671	94
Internal Link Dist (ft)		1708	1013		5317	
Turn Bay Length (ft)	550			150		
Base Capacity (vph)	313	2034	1393	742	590	708
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.70	0.99	0.55	0.97	0.44

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Crowfoot Valley Blvd & Canyonside Blvd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	24	158	1009	48	266	1421
Future Volume (vph)	24	158	1009	48	266	1421
Lane Group Flow (vph)	26	172	1097	52	289	1545
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	23.5	24.0	24.0	10.5	24.0
Total Split (s)	24.0	24.0	43.0	43.0	23.0	66.0
Total Split (%)	26.7%	26.7%	47.8%	47.8%	25.6%	73.3%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	6.0	5.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	0.17	0.59	0.52	0.05	0.59	0.55
Control Delay	39.5	14.9	13.5	3.9	9.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.5	14.9	13.5	3.9	9.2	4.6
Queue Length 50th (ft)	14	0	171	0	26	117
Queue Length 95th (ft)	37	56	319	19	92	217
Internal Link Dist (ft)	1614		3668			1711
Turn Bay Length (ft)				200	200	
Base Capacity (vph)	373	469	2091	956	572	2805
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.37	0.52	0.05	0.51	0.55

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 18: Canyonside Blvd & PA-13 Access

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	28	6	2	9	6	55	4	875	17	93	1073	47
Future Vol, veh/h	28	6	2	9	6	55	4	875	17	93	1073	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	7	2	10	7	60	4	951	18	101	1166	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1881	2371	609	1757	2387	485	1217	0	0	969	0	0
Stage 1	1394	1394	-	968	968	-	-	-	-	-	-	-
Stage 2	487	977	-	789	1419	-	-	-	-	-	-	-
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	44	34	438	54	34	528	569	-	-	707	-	-
Stage 1	149	207	-	273	330	-	-	-	-	-	-	-
Stage 2	531	327	-	350	201	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 29	29	438	40	29	528	569	-	-	707	-	-
Mov Cap-2 Maneuver	~ 29	29	-	40	29	-	-	-	-	-	-	-
Stage 1	148	177	-	271	328	-	-	-	-	-	-	-
Stage 2	458	325	-	288	172	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 443.7	65	0.1	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	569	-	-	31	131	707	-	-
HCM Lane V/C Ratio	0.008	-	-	1.262	0.581	0.143	-	-
HCM Control Delay (s)	11.4	-	-	$ 443.7	65	10.9	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4.4	2.9	0.5	-	-

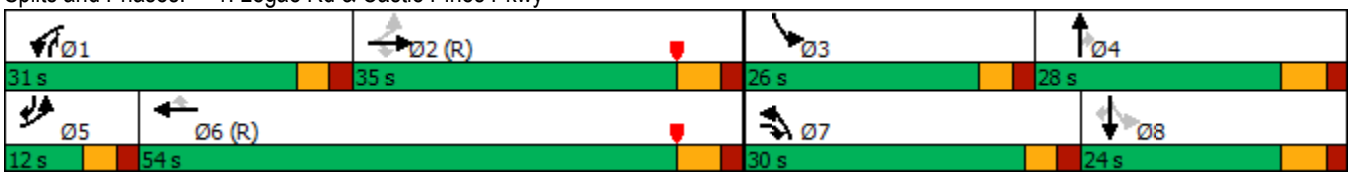
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	1256	236	505	517	19	211	32	446	45	17	30
Future Volume (vph)	55	1256	236	505	517	19	211	32	446	45	17	30
Lane Group Flow (vph)	59	1336	251	549	562	21	271	41	572	79	30	53
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5
Permitted Phases	2		2			6			4	8		8
Detector Phase	5	2	7	1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	10.5	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	10.5
Total Split (s)	12.0	35.0	30.0	31.0	54.0	54.0	30.0	28.0	31.0	26.0	24.0	12.0
Total Split (%)	10.0%	29.2%	25.0%	25.8%	45.0%	45.0%	25.0%	23.3%	25.8%	21.7%	20.0%	10.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	None
v/c Ratio	0.13	0.88	0.24	0.75	0.26	0.02	0.57	0.22	0.72	0.37	0.26	0.17
Control Delay	11.6	41.9	3.3	53.0	16.4	0.2	53.1	51.0	17.5	42.8	58.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	41.9	3.3	53.0	16.4	0.2	53.1	51.0	17.5	42.8	58.4	1.2
Queue Length 50th (ft)	14	514	8	211	98	0	104	30	160	49	23	0
Queue Length 95th (ft)	34	#832	52	225	241	m1	122	54	166	52	33	0
Internal Link Dist (ft)		726			1593			476			245	
Turn Bay Length (ft)	200		240	400		80	150			50		50
Base Capacity (vph)	455	1516	1132	758	2156	940	708	348	800	383	285	318
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.88	0.22	0.72	0.26	0.02	0.38	0.12	0.71	0.21	0.11	0.17

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Legae Rd & Castle Pines Pkwy



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	6	1720	63	221	988	47	2	182	24	2
Future Volume (vph)	6	1720	63	221	988	47	2	182	24	2
Lane Group Flow (vph)	6	1830	67	248	1137	0	60	225	0	78
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2		1	6		4	1		8
Permitted Phases	2		2	6		4		4	8	
Detector Phase	5	2	2	1	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	24.0	23.0	24.0	24.0	24.0	23.0	24.0	24.0
Total Split (s)	12.0	65.0	65.0	23.0	76.0	32.0	32.0	23.0	32.0	32.0
Total Split (%)	10.0%	54.2%	54.2%	19.2%	63.3%	26.7%	26.7%	19.2%	26.7%	26.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		6.0	5.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	C-Max	Max	C-Max	None	None	Max	None	None
v/c Ratio	0.02	1.05	0.08	0.42	0.39		0.52	0.32		0.51
Control Delay	8.8	61.4	1.0	27.3	4.3		66.9	15.9		44.7
Queue Delay	0.0	12.4	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	8.8	73.7	1.0	27.3	4.3		66.9	15.9		44.7
Queue Length 50th (ft)	2	~819	6	104	67		45	70		36
Queue Length 95th (ft)	m1	#970	m0	m203	174		78	110		44
Internal Link Dist (ft)		1593			538		317			183
Turn Bay Length (ft)	250		185	385						
Base Capacity (vph)	309	1740	815	589	2896		282	714		331
Starvation Cap Reductn	0	0	0	0	149		0	0		0
Spillback Cap Reductn	0	49	0	0	0		0	1		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.02	1.08	0.08	0.42	0.41		0.21	0.32		0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 56 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Village Square Dr/Charter Oaks Dr & Castle Pines Pkwy

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	20	1779	275	1135	86	4	261	171	22	53
Future Volume (vph)	20	1779	275	1135	86	4	261	171	22	53
Lane Group Flow (vph)	22	2011	306	1295	102	5	311	219	28	68
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	1	6	3	8	1	7	4	5
Permitted Phases	2		6		8		8	4		4
Detector Phase	5	2	1	6	3	8	1	7	4	5
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	24.0	10.5	24.0	10.0	10.5	24.0	10.0
Total Split (s)	12.0	50.0	30.0	68.0	12.0	28.0	30.0	12.0	28.0	12.0
Total Split (%)	10.0%	41.7%	25.0%	56.7%	10.0%	23.3%	25.0%	10.0%	23.3%	10.0%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.07	0.73	0.74	0.38	0.77	0.07	0.77	1.12	0.26	0.23
Control Delay	6.3	18.0	43.5	9.3	86.7	54.5	44.0	146.0	58.9	2.7
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	18.2	43.5	9.3	86.7	54.5	44.0	146.0	58.9	2.7
Queue Length 50th (ft)	5	206	201	137	~82	4	180	164	21	0
Queue Length 95th (ft)	m5	m244	m293	158	113	15	202	#214	44	0
Internal Link Dist (ft)		538		666		221			315	
Turn Bay Length (ft)	125		390				100			75
Base Capacity (vph)	313	2743	457	3450	133	232	444	196	319	313
Starvation Cap Reductn	0	164	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	42	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.78	0.67	0.38	0.77	0.02	0.70	1.12	0.09	0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

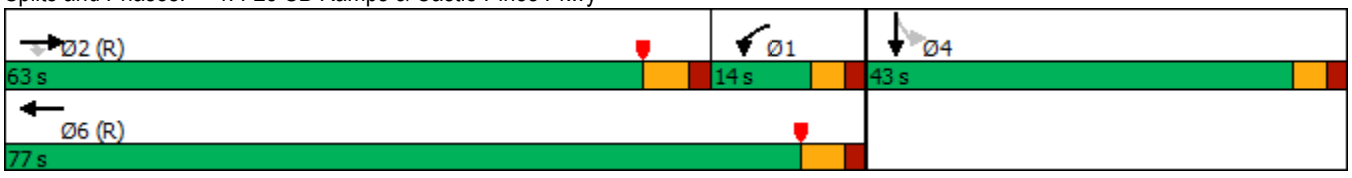
Splits and Phases: 3: Debbie Ln & Castle Pines Pkwy

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1444	767	262	1318	1136	23	422
Future Volume (vph)	1444	767	262	1318	1136	23	422
Lane Group Flow (vph)	1536	816	301	1515	978	489	534
Turn Type	NA	Perm	Prot	NA	Perm	NA	Free
Protected Phases	2		1	6		4	
Permitted Phases		2			4		Free
Detector Phase	2	2	1	6	4	4	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	10.0	24.0	23.0	23.0	
Total Split (s)	63.0	63.0	14.0	77.0	43.0	43.0	
Total Split (%)	52.5%	52.5%	11.7%	64.2%	35.8%	35.8%	
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	
v/c Ratio	0.91	0.76	1.16	0.74	1.12	1.10	0.35
Control Delay	25.4	8.3	143.1	14.4	107.1	113.0	0.7
Queue Delay	0.3	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	9.3	143.1	14.4	107.1	113.0	0.7
Queue Length 50th (ft)	423	23	~141	366	~479	~473	0
Queue Length 95th (ft)	m261	m124	#223	401	#493	#570	0
Internal Link Dist (ft)	666			623		312	
Turn Bay Length (ft)			515				
Base Capacity (vph)	1697	1078	260	2053	874	443	1509
Starvation Cap Reductn	17	91	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.83	1.16	0.74	1.12	1.10	0.35

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 66 (55%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: I-25 SB Ramps & Castle Pines Pkwy

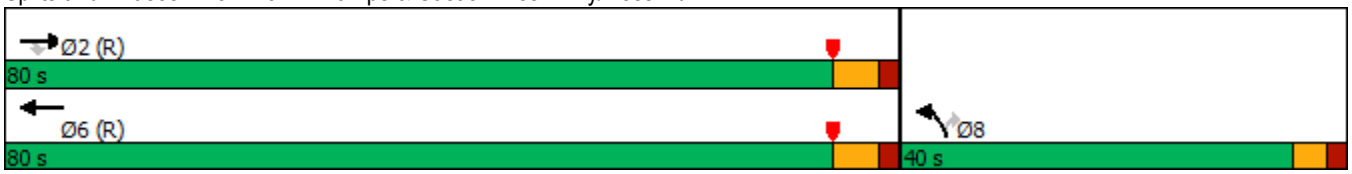


Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	1782	798	2229	439	227
Future Volume (vph)	1782	798	2229	439	227
Lane Group Flow (vph)	1980	887	2423	510	264
Turn Type	NA	Perm	NA	Prot	Perm
Protected Phases	2		6	8	
Permitted Phases		2			8
Detector Phase	2	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	23.0	23.0
Total Split (s)	80.0	80.0	80.0	40.0	40.0
Total Split (%)	66.7%	66.7%	66.7%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.0	5.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.56	0.63	0.67	0.76	0.47
Control Delay	4.7	0.8	2.2	52.6	40.5
Queue Delay	0.0	0.5	0.1	0.0	0.0
Total Delay	4.7	1.3	2.3	52.6	40.5
Queue Length 50th (ft)	51	0	50	192	93
Queue Length 95th (ft)	m209	m6	73	225	125
Internal Link Dist (ft)	132		479	705	
Turn Bay Length (ft)				450	450
Base Capacity (vph)	3567	1402	3601	982	806
Starvation Cap Reductn	0	189	304	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.56	0.73	0.73	0.52	0.33

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: I-25 NB Ramps & Castle Pines Pkwy/Hess Rd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	178	1831	2089	226	192	140
Future Volume (vph)	178	1831	2089	226	192	140
Lane Group Flow (vph)	223	2289	2785	301	234	171
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	10.0	94.0	84.0	84.0	26.0	26.0
Total Split (%)	8.3%	78.3%	70.0%	70.0%	21.7%	21.7%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	1.56	0.63	0.84	0.30	0.74	0.54
Control Delay	315.8	4.6	6.7	0.6	62.3	37.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	315.8	4.7	6.7	0.6	62.3	37.0
Queue Length 50th (ft)	~126	119	142	0	174	81
Queue Length 95th (ft)	#180	109	61	m0	237	135
Internal Link Dist (ft)		479	312		681	
Turn Bay Length (ft)	325			250		450
Base Capacity (vph)	143	3657	3305	1018	315	317
Starvation Cap Reductn	0	54	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.56	0.64	0.84	0.30	0.74	0.54

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 62 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

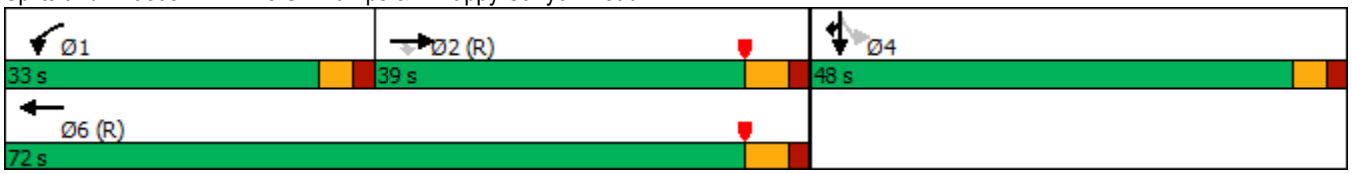
Splits and Phases: 6: Hess Rd & Havana St

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	623	310	555	495	574	5	625
Future Volume (vph)	623	310	555	495	574	5	625
Lane Group Flow (vph)	685	341	624	556	322	329	702
Turn Type	NA	Perm	Prot	NA	Perm	NA	Prot
Protected Phases	2		1	6		4	4
Permitted Phases		2			4		
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.5	24.0	23.5	23.5	23.5
Total Split (s)	39.0	39.0	33.0	72.0	48.0	48.0	48.0
Total Split (%)	32.5%	32.5%	27.5%	60.0%	40.0%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Max	Max	Max
v/c Ratio	0.66	0.47	0.84	0.32	0.57	0.58	0.71
Control Delay	41.1	5.9	52.7	3.3	35.7	36.1	37.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	5.9	52.7	3.3	35.7	36.1	37.9
Queue Length 50th (ft)	247	0	240	42	209	215	263
Queue Length 95th (ft)	321	71	m285	m44	307	313	336
Internal Link Dist (ft)	345			368		549	
Turn Bay Length (ft)		250	175				
Base Capacity (vph)	1039	718	817	1711	569	569	989
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.47	0.76	0.32	0.57	0.58	0.71

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: I-25 SB Ramps & E Happy Canyon Road

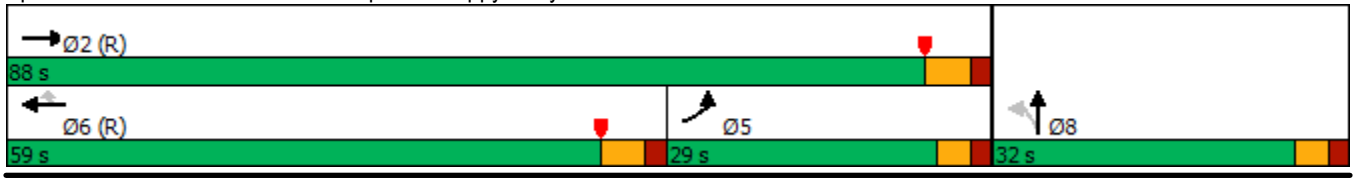


Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	590	607	600	943	450	5	516
Future Volume (vph)	590	607	600	943	450	5	516
Lane Group Flow (vph)	634	653	706	1109	284	278	637
Turn Type	Prot	NA	NA	Perm	Perm	NA	Free
Protected Phases	5	2	6			8	
Permitted Phases				6	8		Free
Detector Phase	5	2	6	6	8	8	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5	
Total Split (s)	29.0	88.0	59.0	59.0	32.0	32.0	
Total Split (%)	24.2%	73.3%	49.2%	49.2%	26.7%	26.7%	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	
Lead/Lag	Lag		Lead	Lead			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	
v/c Ratio	0.93	0.30	0.44	1.07	0.87	0.85	0.42
Control Delay	52.1	6.7	6.1	59.2	71.5	69.0	0.9
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	52.1	6.9	6.1	59.2	71.5	69.0	0.9
Queue Length 50th (ft)	199	57	46	~473	224	218	0
Queue Length 95th (ft)	#355	98	m49	m273	#322	#311	0
Internal Link Dist (ft)		368	3425			459	
Turn Bay Length (ft)	200			250			250
Base Capacity (vph)	680	2202	1594	1034	326	326	1509
Starvation Cap Reductn	0	745	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.45	0.44	1.07	0.87	0.85	0.42

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: I-25 NB Ramps & E Happy Canyon Road

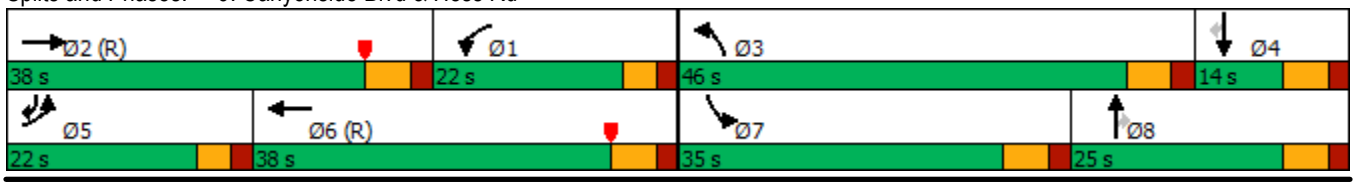


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	277	664	877	553	836	1475	120	550	66	72	144
Future Volume (vph)	277	664	877	553	836	1475	120	550	66	72	144
Lane Group Flow (vph)	308	738	974	614	1060	1639	133	611	73	80	160
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6	3	8		7	4	5
Permitted Phases			Free					8			4
Detector Phase	5	2		1	6	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0		10.0	24.0	11.0	24.0	24.0	11.0	24.0	10.0
Total Split (s)	22.0	38.0		22.0	38.0	46.0	25.0	25.0	35.0	14.0	22.0
Total Split (%)	18.3%	31.7%		18.3%	31.7%	38.3%	20.8%	20.8%	29.2%	11.7%	18.3%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None	None	None	None	None
v/c Ratio	0.71	0.51	0.60	1.24	0.69	0.99	0.23	0.70	0.48	0.37	0.32
Control Delay	53.4	33.3	2.5	166.4	39.8	53.4	26.6	6.6	62.1	58.7	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	33.3	2.5	166.4	39.8	53.4	26.6	6.6	62.1	58.7	4.4
Queue Length 50th (ft)	119	182	38	~304	271	343	51	52	55	31	0
Queue Length 95th (ft)	m167	231	55	#419	330	#539	m69	m99	101	58	34
Internal Link Dist (ft)		805			502		824			444	
Turn Bay Length (ft)	250		250	250		250		250			
Base Capacity (vph)	486	1453	1615	496	1541	1663	577	870	427	235	516
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.51	0.60	1.24	0.69	0.99	0.23	0.70	0.17	0.34	0.31

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 91 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Canyonside Blvd & Hess Rd

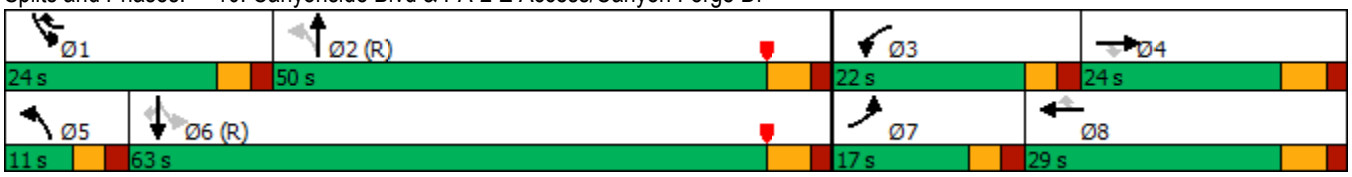


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	137	7	32	47	9	410	81	1598	240	1031	231
Future Volume (vph)	137	7	32	47	9	410	81	1598	240	1031	231
Lane Group Flow (vph)	152	8	36	52	10	456	90	1828	267	1146	257
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	1	6	
Permitted Phases			4			8	2		6		6
Detector Phase	7	4	4	3	8	1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	10.5	24.0	24.0
Total Split (s)	17.0	24.0	24.0	22.0	29.0	24.0	11.0	50.0	24.0	63.0	63.0
Total Split (%)	14.2%	20.0%	20.0%	18.3%	24.2%	20.0%	9.2%	41.7%	20.0%	52.5%	52.5%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
v/c Ratio	0.37	0.08	0.15	0.38	0.10	0.88	0.28	0.80	0.48	0.49	0.23
Control Delay	50.4	55.6	1.3	59.9	56.0	51.5	9.4	25.1	29.3	9.7	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	55.6	1.3	59.9	56.0	51.5	9.4	25.1	29.3	9.7	1.3
Queue Length 50th (ft)	53	6	0	39	8	281	26	508	120	153	0
Queue Length 95th (ft)	92	23	0	79	26	365	m19	#614	m154	m201	m0
Internal Link Dist (ft)		373			367			826		824	
Turn Bay Length (ft)							200		200		200
Base Capacity (vph)	456	279	376	250	357	518	317	2282	551	2347	1136
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.03	0.10	0.21	0.03	0.88	0.28	0.80	0.48	0.49	0.23

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Canyonside Blvd & PA-2 E Access/Canyon Forge Dr



Intersection	
Int Delay, s/veh	2.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	238	1140	140	0	1507
Future Vol, veh/h	0	238	1140	140	0	1507
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	264	1267	156	0	1674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	634	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	422	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	422	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	26.8	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	422	-
HCM Lane V/C Ratio	-	0.627	-
HCM Control Delay (s)	-	26.8	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	4.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	351	16	726	5	40	13	1160	1177	6	777	248
Future Volume (vph)	351	16	726	5	40	13	1160	1177	6	777	248
Lane Group Flow (vph)	390	18	807	0	50	14	1289	1314	7	863	276
Turn Type	Perm	NA	Free	Perm	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases		4			8		5	2		6	
Permitted Phases	4		Free	8		8			6		6
Detector Phase	4	4		8	8	8	5	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	10.5	24.0	24.0	24.0	24.0
Total Split (s)	42.0	42.0		42.0	42.0	42.0	42.0	78.0	36.0	36.0	36.0
Total Split (%)	35.0%	35.0%		35.0%	35.0%	35.0%	35.0%	65.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0	6.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag							Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.97	0.03	0.51		0.09	0.03	1.22	0.62	0.11	0.97	0.46
Control Delay	78.9	27.8	1.4		31.0	0.1	143.7	16.7	40.5	68.0	7.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.9	27.8	1.4		31.0	0.1	143.7	16.7	40.5	68.0	7.6
Queue Length 50th (ft)	309	9	0		28	0	~631	321	4	350	5
Queue Length 95th (ft)	#504	m22	29		59	0	#765	390	18	#485	75
Internal Link Dist (ft)		3425			705			988		756	
Turn Bay Length (ft)	250		250			250	250		250		250
Base Capacity (vph)	404	558	1583		547	532	1058	2130	62	892	599
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.03	0.51		0.09	0.03	1.22	0.62	0.11	0.97	0.46

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Happy Canyon Rd & Canyonside Blvd

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1742	281	140	2315	0	76
Future Vol, veh/h	1742	281	140	2315	0	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	1936	312	156	2572	0	84

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2248	0	-	968
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	368	-	0	*524
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	368	-	-	*524
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	524	-	-	368	-
HCM Lane V/C Ratio	0.161	-	-	0.423	-
HCM Control Delay (s)	13.2	-	-	21.8	-
HCM Lane LOS	B	-	-	C	-
HCM 95th %tile Q(veh)	0.6	-	-	2	-

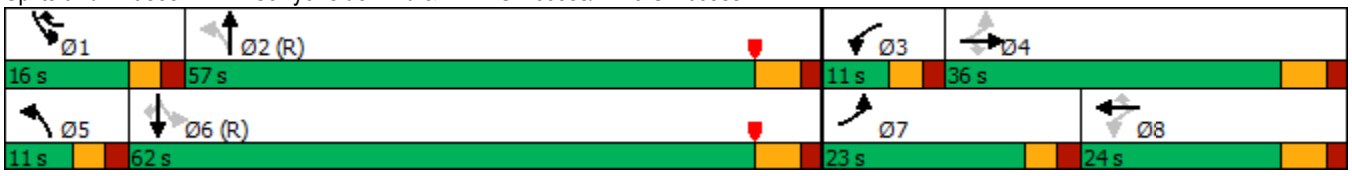
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	195	1	68	34	1	78	84	1453	92	888	130
Future Volume (vph)	195	1	68	34	1	78	84	1453	92	888	130
Lane Group Flow (vph)	217	1	76	38	1	87	93	1648	102	987	144
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	1	6	
Permitted Phases	4		4	8		8	2		6		6
Detector Phase	7	4	4	3	8	1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	10.5	24.0	24.0
Total Split (s)	23.0	36.0	36.0	11.0	24.0	16.0	11.0	57.0	16.0	62.0	62.0
Total Split (%)	19.2%	30.0%	30.0%	9.2%	20.0%	13.3%	9.2%	47.5%	13.3%	51.7%	51.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
v/c Ratio	0.79	0.01	0.29	0.35	0.01	0.35	0.23	0.74	0.49	0.43	0.13
Control Delay	68.3	48.0	5.0	56.4	55.0	6.8	6.4	19.3	34.0	7.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	48.0	5.0	56.4	55.0	6.8	6.4	19.3	34.0	7.6	0.3
Queue Length 50th (ft)	165	1	0	29	1	0	15	406	38	109	0
Queue Length 95th (ft)	224	6	15	52	7	23	42	#723	108	109	1
Internal Link Dist (ft)		206			219			288		826	
Turn Bay Length (ft)							200		200		200
Base Capacity (vph)	289	465	484	110	279	285	397	2238	247	2283	1079
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.00	0.16	0.35	0.00	0.31	0.23	0.74	0.41	0.43	0.13

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 39 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 14: Canyonside Blvd & PA-2 S Access/PA-3 S Access



Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	22	1295	83	46	1507
Future Vol, veh/h	0	22	1295	83	46	1507
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	24	1439	92	51	1674

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	720	0	0	1531	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	370	-	-	441	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	370	-	-	441	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.4
HCM LOS	C		

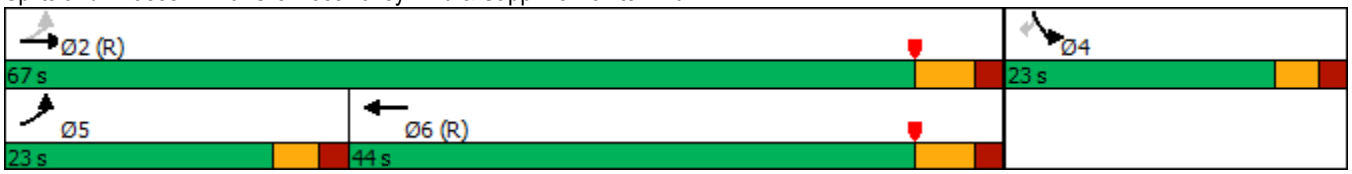
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	370	441	-
HCM Lane V/C Ratio	-	-	0.066	0.116	-
HCM Control Delay (s)	-	-	15.4	14.2	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.4	-

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	82	1237	1506	27	193
Future Volume (vph)	82	1237	1506	27	193
Lane Group Flow (vph)	86	1302	1807	30	217
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	24.0	24.0	23.5	23.5
Total Split (s)	23.0	67.0	44.0	23.0	23.0
Total Split (%)	25.6%	74.4%	48.9%	25.6%	25.6%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
v/c Ratio	0.40	0.56	0.90	0.09	0.44
Control Delay	12.2	8.7	25.9	30.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.2	8.7	25.9	30.2	7.6
Queue Length 50th (ft)	14	176	471	14	0
Queue Length 95th (ft)	40	226	#548	37	55
Internal Link Dist (ft)		748	1670	1059	
Turn Bay Length (ft)	550				175
Base Capacity (vph)	419	2330	2012	347	493
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.56	0.90	0.09	0.44

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Crowfoot Valley Blvd & Sapphire Pointe Blvd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	339	925	1183	469	350	335
Future Volume (vph)	339	925	1183	469	350	335
Lane Group Flow (vph)	377	1028	1314	521	389	372
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	25.0	83.0	58.0	58.0	37.0	37.0
Total Split (%)	20.8%	69.2%	48.3%	48.3%	30.8%	30.8%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	1.06	0.45	0.86	0.62	0.82	0.57
Control Delay	98.5	11.6	37.5	15.0	51.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.5	11.6	37.5	15.0	51.9	7.6
Queue Length 50th (ft)	~268	196	473	138	294	23
Queue Length 95th (ft)	#464	241	575	255	#446	52
Internal Link Dist (ft)		1670	1107		5393	
Turn Bay Length (ft)	550			150		
Base Capacity (vph)	357	2270	1533	844	472	653
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.45	0.86	0.62	0.82	0.57

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Crowfoot Valley Blvd & Canyonside Blvd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	170	682	1120	156	629	651
Future Volume (vph)	170	682	1120	156	629	651
Lane Group Flow (vph)	185	741	1217	170	684	708
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	10.5	24.0	24.0	10.5	24.0
Total Split (s)	35.0	40.0	45.0	45.0	40.0	85.0
Total Split (%)	29.2%	33.3%	37.5%	37.5%	33.3%	70.8%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	6.0	5.0	6.0
Lead/Lag		Lead	Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	0.70	0.87	0.93	0.26	0.57	0.26
Control Delay	62.5	35.2	56.6	18.7	34.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	35.2	56.6	18.7	34.0	5.0
Queue Length 50th (ft)	138	465	507	51	218	74
Queue Length 95th (ft)	205	612	m#638	m99	286	120
Internal Link Dist (ft)	1553		3773			1225
Turn Bay Length (ft)				200	200	
Base Capacity (vph)	442	855	1308	652	1196	2688
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.87	0.93	0.26	0.57	0.26

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Canyonside Blvd & PA-13 Access

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	5	4	17	5	71	1	998	6	23	725	13
Future Vol, veh/h	38	5	4	17	5	71	1	998	6	23	725	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	5	4	18	5	77	1	1085	7	25	788	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1392	1939	401	1538	1943	546	802	0	0	1092	0	0
Stage 1	845	845	-	1091	1091	-	-	-	-	-	-	-
Stage 2	547	1094	-	447	852	-	-	-	-	-	-	-
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	101	65	599	79	64	482	817	-	-	635	-	-
Stage 1	324	377	-	229	289	-	-	-	-	-	-	-
Stage 2	489	288	-	560	374	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	62	599	71	61	482	817	-	-	635	-	-
Mov Cap-2 Maneuver	77	62	-	71	61	-	-	-	-	-	-	-
Stage 1	324	362	-	229	289	-	-	-	-	-	-	-
Stage 2	402	288	-	526	359	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	106.1	40.7	0	0.3
HCM LOS	F	E		

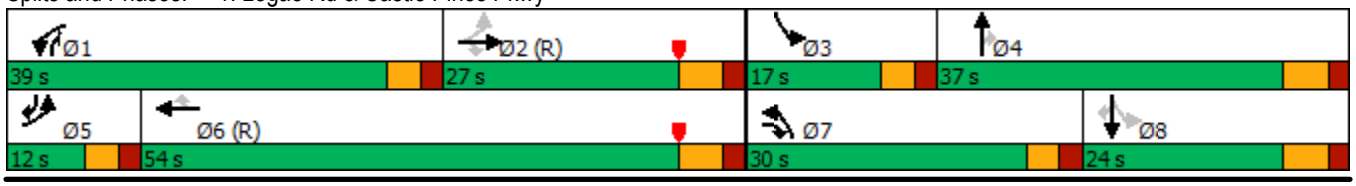
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	817	-	-	81	198	635	-	-
HCM Lane V/C Ratio	0.001	-	-	0.631	0.511	0.039	-	-
HCM Control Delay (s)	9.4	-	-	106.1	40.7	10.9	-	-
HCM Lane LOS	A	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2.9	2.6	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	839	332	730	1422	23	610	26	642	128	43	66
Future Volume (vph)	51	839	332	730	1422	23	610	26	642	128	43	66
Lane Group Flow (vph)	54	893	353	793	1546	25	670	29	705	162	54	84
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	7	1	6		7	4	1	3	8	5
Permitted Phases	2		2			6			4	8		8
Detector Phase	5	2	7	1	6	6	7	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	10.0	24.0	24.0	10.0	24.0	10.0	10.0	24.0	10.0
Total Split (s)	12.0	27.0	30.0	39.0	54.0	54.0	30.0	37.0	39.0	17.0	24.0	12.0
Total Split (%)	10.0%	22.5%	25.0%	32.5%	45.0%	45.0%	25.0%	30.8%	32.5%	14.2%	20.0%	10.0%
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	C-Max	None	None	None	None	None	None
v/c Ratio	0.31	1.18	0.40	0.73	0.89	0.03	0.95	0.11	0.85	0.43	0.39	0.21
Control Delay	24.0	135.3	6.6	33.0	23.8	0.0	70.4	41.9	29.8	35.0	60.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	135.3	6.6	33.0	23.8	0.0	70.4	41.9	29.8	35.0	60.3	1.2
Queue Length 50th (ft)	17	~430	31	253	601	0	265	19	326	92	41	0
Queue Length 95th (ft)	38	#622	101	m261	m#815	m0	#381	45	450	123	71	0
Internal Link Dist (ft)		726			1593			476			245	
Turn Bay Length (ft)	200		240	400		80	150			50		50
Base Capacity (vph)	179	758	878	1079	1736	803	708	490	831	378	285	405
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.18	0.40	0.73	0.89	0.03	0.95	0.06	0.85	0.43	0.19	0.21

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 17 (14%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Legae Rd & Castle Pines Pkwy

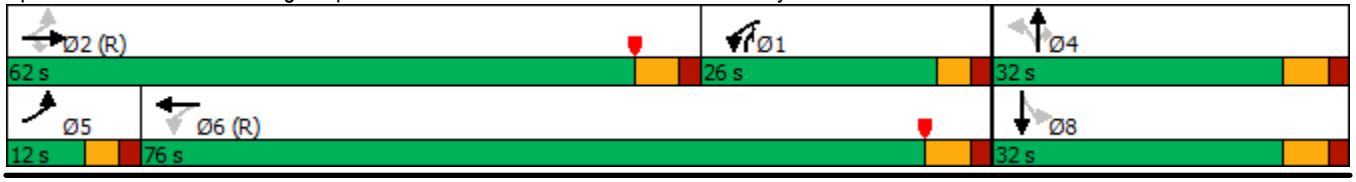


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	32	1490	110	394	1949	118	8	269	28	18
Future Volume (vph)	32	1490	110	394	1949	118	8	269	28	18
Lane Group Flow (vph)	35	1637	121	443	2226	0	140	299	0	87
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	pm+ov	Perm	NA
Protected Phases	5	2		1	6		4	1		8
Permitted Phases	2		2	6		4		4	8	
Detector Phase	5	2	2	1	6	4	4	1	8	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	24.0	24.0	10.5	24.0	24.0
Total Split (s)	12.0	62.0	62.0	26.0	76.0	32.0	32.0	26.0	32.0	32.0
Total Split (%)	10.0%	51.7%	51.7%	21.7%	63.3%	26.7%	26.7%	21.7%	26.7%	26.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0		6.0	5.0		6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag			Lag		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes			Yes		
Recall Mode	None	C-Max	C-Max	None	C-Max	None	None	None	None	None
v/c Ratio	0.22	0.87	0.14	1.19	0.92		0.73	0.46		0.38
Control Delay	14.5	20.3	3.2	130.2	11.2		69.0	22.5		36.7
Queue Delay	0.0	1.1	0.0	0.0	0.2		0.0	0.0		0.0
Total Delay	14.5	21.4	3.2	130.2	11.3		69.0	22.5		36.7
Queue Length 50th (ft)	10	656	6	~370	377		105	129		45
Queue Length 95th (ft)	m11	m665	m4	#580	#1116		165	189		82
Internal Link Dist (ft)		1593			538		317			183
Turn Bay Length (ft)	250		185	385						
Base Capacity (vph)	166	1882	883	371	2432		275	647		317
Starvation Cap Reductn	0	0	0	0	14		0	0		0
Spillback Cap Reductn	0	89	0	0	0		0	2		0
Storage Cap Reductn	0	0	0	0	0		0	0		0
Reduced v/c Ratio	0.21	0.91	0.14	1.19	0.92		0.51	0.46		0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Village Square Dr/Charter Oaks Dr & Castle Pines Pkwy



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	34	1640	322	2272	115	14	260	193	14	52
Future Volume (vph)	34	1640	322	2272	115	14	260	193	14	52
Lane Group Flow (vph)	37	1886	362	2571	121	15	274	238	17	64
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2	1	6	3	8	1	7	4	5
Permitted Phases	2		6		8		8	4		4
Detector Phase	5	2	1	6	3	8	1	7	4	5
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0	10.0	24.0	10.0	24.0	10.0	10.0	24.0	10.0
Total Split (s)	10.0	53.0	28.0	71.0	16.0	21.0	28.0	18.0	23.0	10.0
Total Split (%)	8.3%	44.2%	23.3%	59.2%	13.3%	17.5%	23.3%	15.0%	19.2%	8.3%
Yellow Time (s)	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	5.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None	None
v/c Ratio	0.23	0.74	0.83	0.77	0.52	0.20	0.60	0.95	0.15	0.23
Control Delay	15.7	15.3	50.3	13.2	52.6	59.3	31.9	94.8	54.4	2.2
Queue Delay	0.0	0.6	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.7	15.9	50.3	13.3	52.6	59.3	31.9	94.8	54.4	2.2
Queue Length 50th (ft)	1	204	229	228	91	11	144	~235	13	0
Queue Length 95th (ft)	m5	#638	m327	428	132	34	194	221	32	0
Internal Link Dist (ft)		538		666		221			315	
Turn Bay Length (ft)	125		390				100			75
Base Capacity (vph)	161	2541	450	3330	232	158	470	250	246	277
Starvation Cap Reductn	0	299	0	97	0	0	0	0	0	0
Spillback Cap Reductn	0	78	0	91	0	0	1	0	0	2
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.84	0.80	0.80	0.52	0.09	0.58	0.95	0.07	0.23

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 91 (76%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

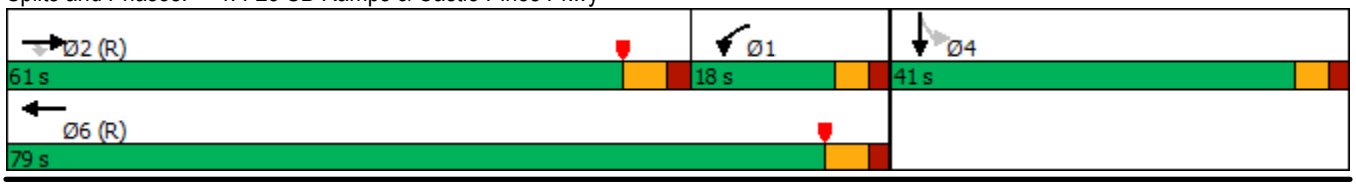
Splits and Phases: 3: Debbie Ln & Castle Pines Pkwy

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1368	725	213	1560	1114	54	1026
Future Volume (vph)	1368	725	213	1560	1114	54	1026
Lane Group Flow (vph)	1609	853	234	1714	867	431	1140
Turn Type	NA	Perm	Prot	NA	Perm	NA	Free
Protected Phases	2		1	6		4	
Permitted Phases		2			4		Free
Detector Phase	2	2	1	6	4	4	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	10.5	24.0	23.5	23.5	
Total Split (s)	61.0	61.0	18.0	79.0	41.0	41.0	
Total Split (%)	50.8%	50.8%	15.0%	65.8%	34.2%	34.2%	
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	None	None	
v/c Ratio	0.98	0.81	0.62	0.81	1.05	1.01	0.76
Control Delay	37.5	14.4	55.9	19.6	85.4	88.2	3.6
Queue Delay	0.5	0.9	0.0	0.5	0.0	0.0	0.1
Total Delay	38.0	15.2	55.9	20.0	85.4	88.2	3.7
Queue Length 50th (ft)	537	33	97	454	~401	~372	0
Queue Length 95th (ft)	#393	m233	m131	662	#535	#606	0
Internal Link Dist (ft)	666			623		312	
Turn Bay Length (ft)			515				
Base Capacity (vph)	1638	1051	375	2111	828	427	1509
Starvation Cap Reductn	5	52	0	107	0	0	0
Spillback Cap Reductn	0	0	0	52	0	0	22
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.85	0.62	0.86	1.05	1.01	0.77

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 87 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: I-25 SB Ramps & Castle Pines Pkwy

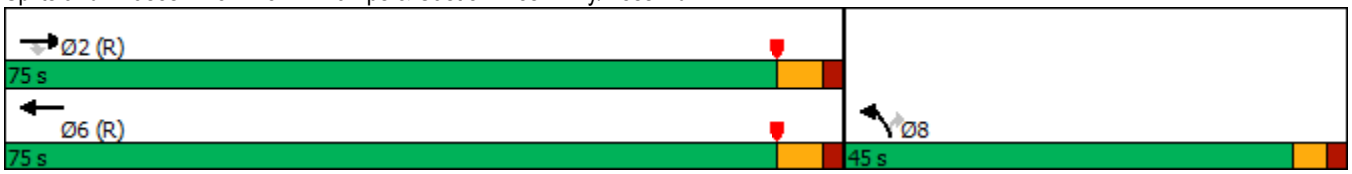


Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Configurations					
Traffic Volume (vph)	2056	426	2124	745	243
Future Volume (vph)	2056	426	2124	745	243
Lane Group Flow (vph)	2187	453	2309	866	283
Turn Type	NA	Perm	NA	Prot	Perm
Protected Phases	2		6	8	
Permitted Phases		2			8
Detector Phase	2	2	6	8	8
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	23.5	23.5
Total Split (s)	75.0	75.0	75.0	45.0	45.0
Total Split (%)	62.5%	62.5%	62.5%	37.5%	37.5%
Yellow Time (s)	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.0	5.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	None	None
v/c Ratio	0.72	0.39	0.75	0.85	0.34
Control Delay	12.1	0.9	2.4	48.1	32.0
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	12.1	0.9	2.6	48.1	32.0
Queue Length 50th (ft)	323	12	33	320	92
Queue Length 95th (ft)	m387	m13	52	362	123
Internal Link Dist (ft)	132		479	705	
Turn Bay Length (ft)				450	450
Base Capacity (vph)	3053	1152	3083	1122	909
Starvation Cap Reductn	0	0	147	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.72	0.39	0.79	0.77	0.31

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 82 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: I-25 NB Ramps & Castle Pines Pkwy/Hess Rd



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	121	2178	1913	180	199	211
Future Volume (vph)	121	2178	1913	180	199	211
Lane Group Flow (vph)	142	2562	2149	202	262	278
Turn Type	Prot	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	25.0	93.0	68.0	68.0	27.0	27.0
Total Split (%)	20.8%	77.5%	56.7%	56.7%	22.5%	22.5%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	0.25	0.71	0.82	0.25	0.79	0.56
Control Delay	36.1	4.0	11.4	1.7	65.2	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	4.1	11.4	1.7	65.2	11.6
Queue Length 50th (ft)	50	95	243	15	196	13
Queue Length 95th (ft)	m72	94	m263	m13	239	45
Internal Link Dist (ft)		479	312		681	
Turn Bay Length (ft)	325			250		450
Base Capacity (vph)	572	3616	2627	816	330	495
Starvation Cap Reductn	0	99	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.73	0.82	0.25	0.79	0.56

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 69 (58%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

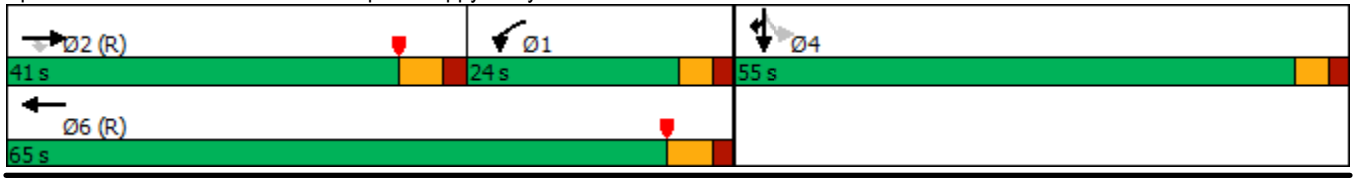
Splits and Phases: 6: Hess Rd & Havana St

Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	801	625	508	640	824	5	825
Future Volume (vph)	801	625	508	640	824	5	825
Lane Group Flow (vph)	880	687	571	719	463	469	927
Turn Type	NA	Perm	Prot	NA	Perm	NA	Prot
Protected Phases	2		1	6		4	4
Permitted Phases		2			4		
Detector Phase	2	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	10.5	24.0	23.5	23.5	23.5
Total Split (s)	41.0	41.0	24.0	65.0	55.0	55.0	55.0
Total Split (%)	34.2%	34.2%	20.0%	54.2%	45.8%	45.8%	45.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes				
Recall Mode	C-Max	C-Max	None	C-Max	Max	Max	Max
v/c Ratio	0.86	0.72	1.03	0.47	0.70	0.71	0.81
Control Delay	50.1	7.3	93.4	33.0	35.7	36.1	37.4
Queue Delay	0.7	0.0	0.0	0.9	0.0	0.0	0.0
Total Delay	50.8	7.3	93.4	33.9	35.7	36.1	37.4
Queue Length 50th (ft)	338	0	~222	232	306	311	352
Queue Length 95th (ft)	#428	104	m#329	m286	433	440	440
Internal Link Dist (ft)	337			370		549	
Turn Bay Length (ft)			175				
Base Capacity (vph)	1022	957	554	1530	661	662	1150
Starvation Cap Reductn	0	0	0	504	0	0	0
Spillback Cap Reductn	25	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.72	1.03	0.70	0.70	0.71	0.81

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 50 (42%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: I-25 SB Ramps & Happy Canyon Rd



Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Configurations							
Traffic Volume (vph)	770	855	528	519	620	5	493
Future Volume (vph)	770	855	528	519	620	5	493
Lane Group Flow (vph)	828	919	621	611	382	389	609
Turn Type	Prot	NA	NA	Perm	Perm	NA	Free
Protected Phases	5	2	6			8	
Permitted Phases				6	8		Free
Detector Phase	5	2	6	6	8	8	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5	
Total Split (s)	44.0	78.0	34.0	34.0	42.0	42.0	
Total Split (%)	36.7%	65.0%	28.3%	28.3%	35.0%	35.0%	
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0	
Lead/Lag	Lag		Lead	Lead			
Lead-Lag Optimize?	Yes		Yes	Yes			
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	
v/c Ratio	0.75	0.48	0.74	0.77	0.85	0.87	0.40
Control Delay	29.5	8.6	34.1	16.0	58.1	60.0	0.8
Queue Delay	1.8	0.6	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	9.2	34.1	16.0	58.1	60.0	0.8
Queue Length 50th (ft)	234	96	261	285	291	298	0
Queue Length 95th (ft)	m297	m146	m283	m304	#374	#398	0
Internal Link Dist (ft)		370	3404			459	
Turn Bay Length (ft)	200			250			
Base Capacity (vph)	1105	1933	842	793	448	448	1509
Starvation Cap Reductn	140	591	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.68	0.74	0.77	0.85	0.87	0.40

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

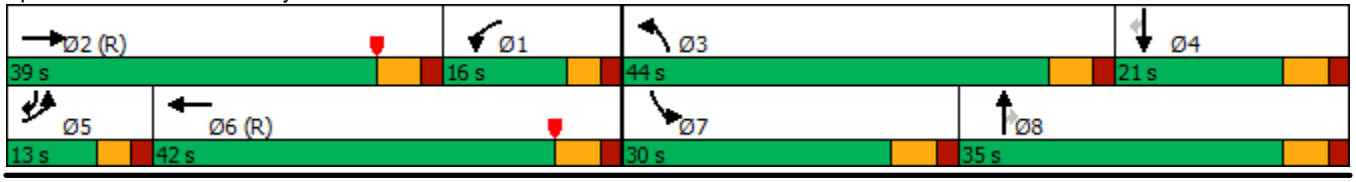
Splits and Phases: 8: I-25 NB Ramps & Happy Canyon Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	121	1193	1133	660	601	1412	201	435	104	216	204
Future Volume (vph)	121	1193	1133	660	601	1412	201	435	104	216	204
Lane Group Flow (vph)	132	1326	1259	733	715	1569	218	483	113	235	222
Turn Type	Prot	NA	Free	Prot	NA	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6	3	8		7	4	5
Permitted Phases			Free					8			4
Detector Phase	5	2		1	6	3	8	8	7	4	5
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	24.0		10.0	24.0	24.0	11.0	11.0	24.0	11.0	10.0
Total Split (s)	13.0	39.0		16.0	42.0	44.0	35.0	35.0	30.0	21.0	13.0
Total Split (%)	10.8%	32.5%		13.3%	35.0%	36.7%	29.2%	29.2%	25.0%	17.5%	10.8%
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0		5.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max		None	C-Max	None	None	None	None	None	None
v/c Ratio	0.55	0.91	0.78	2.28	0.45	0.99	0.37	0.64	0.59	0.62	0.44
Control Delay	53.8	41.7	7.9	612.6	33.9	49.0	30.0	9.0	63.0	58.4	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	41.7	7.9	612.6	33.9	49.0	30.0	9.0	63.0	58.4	10.8
Queue Length 50th (ft)	52	363	194	~475	163	303	116	43	85	92	19
Queue Length 95th (ft)	m72	#476	402	#596	203	m#512	m167	m100	140	134	85
Internal Link Dist (ft)		805			502		824			422	
Turn Bay Length (ft)	250		250	250		250		250			
Base Capacity (vph)	245	1459	1615	321	1587	1580	588	760	354	442	509
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.91	0.78	2.28	0.45	0.99	0.37	0.64	0.32	0.53	0.44

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 111 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Canyonside Blvd & Hess Rd

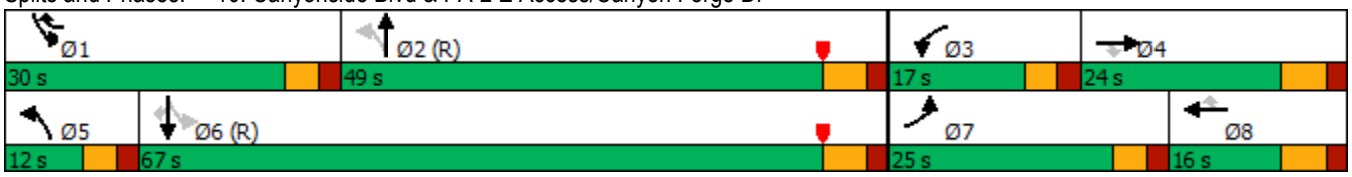


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	497	25	167	100	38	333	126	1218	383	1503	123
Future Volume (vph)	497	25	167	100	38	333	126	1218	383	1503	123
Lane Group Flow (vph)	552	28	186	111	42	370	140	1430	426	1670	137
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2	1	6	
Permitted Phases			4			8	2		6		6
Detector Phase	7	4	4	3	8	1	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	10.5	10.5	24.0	10.5	24.0	24.0
Total Split (s)	25.0	24.0	24.0	17.0	16.0	30.0	12.0	49.0	30.0	67.0	67.0
Total Split (%)	20.8%	20.0%	20.0%	14.2%	13.3%	25.0%	10.0%	40.8%	25.0%	55.8%	55.8%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	5.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
v/c Ratio	0.97	0.12	0.55	0.69	0.34	0.63	0.75	0.74	0.93	0.88	0.15
Control Delay	79.8	46.2	16.5	74.2	60.4	28.0	50.2	25.0	45.1	23.6	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.8	46.2	16.5	74.2	60.4	28.0	50.2	25.0	45.1	23.6	1.4
Queue Length 50th (ft)	221	19	15	84	32	161	63	298	283	726	2
Queue Length 95th (ft)	#334	47	84	#156	68	265	m#167	287	m293	m314	m3
Internal Link Dist (ft)		373			367			826		824	
Turn Bay Length (ft)							200		200		200
Base Capacity (vph)	572	279	376	177	155	583	187	1931	456	1889	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.10	0.49	0.63	0.27	0.63	0.75	0.74	0.93	0.88	0.15

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 46 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Canyonside Blvd & PA-2 E Access/Canyon Forge Dr



Intersection	
Int Delay, s/veh	1.2

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	133	1525	207	0	1304
Future Vol, veh/h	0	133	1525	207	0	1304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	None
Storage Length	-	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	148	1694	230	0	1449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	847	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	305	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	305	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	27.4	0	0
HCM LOS	D		

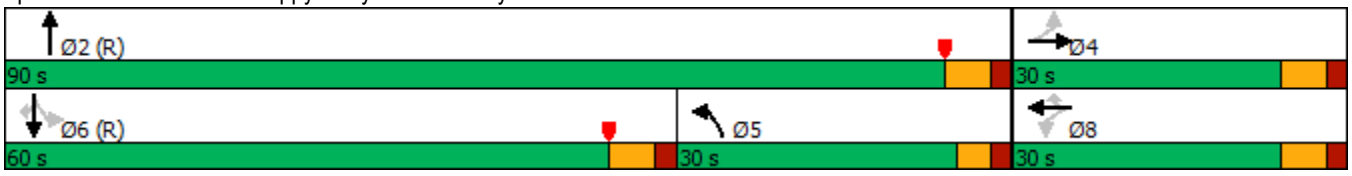
Minor Lane/Major Mvmt	NET	NWLn1	SWT
Capacity (veh/h)	-	305	-
HCM Lane V/C Ratio	-	0.485	-
HCM Control Delay (s)	-	27.4	-
HCM Lane LOS	-	D	-
HCM 95th %tile Q(veh)	-	2.5	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	236	41	1001	5	23	11	636	1056	15	1410	333
Future Volume (vph)	236	41	1001	5	23	11	636	1056	15	1410	333
Lane Group Flow (vph)	262	46	1112	0	32	12	707	1179	17	1567	370
Turn Type	Perm	NA	Free	Perm	NA	Perm	Prot	NA	Perm	NA	Perm
Protected Phases		4			8		5	2		6	
Permitted Phases	4		Free	8		8			6		6
Detector Phase	4	4		8	8	8	5	2	6	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0		24.0	24.0	24.0	10.5	24.0	24.0	24.0	24.0
Total Split (s)	30.0	30.0		30.0	30.0	30.0	30.0	90.0	60.0	60.0	60.0
Total Split (%)	25.0%	25.0%		25.0%	25.0%	25.0%	25.0%	75.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0			6.0	6.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag							Lag		Lead	Lead	Lead
Lead-Lag Optimize?							Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.96	0.12	0.70		0.09	0.03	0.99	0.48	0.11	0.98	0.43
Control Delay	85.6	38.0	7.7		40.0	0.2	78.6	8.9	21.7	52.0	7.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	38.0	7.7		40.0	0.2	78.6	8.9	21.7	52.0	7.7
Queue Length 50th (ft)	178	23	304		20	0	284	194	7	617	45
Queue Length 95th (ft)	#364	51	698		49	0	#410	236	24	#793	117
Internal Link Dist (ft)		3404			715			940		753	
Turn Bay Length (ft)	250		250			250	250		250		250
Base Capacity (vph)	274	372	1583		357	382	715	2476	152	1593	860
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.12	0.70		0.09	0.03	0.99	0.48	0.11	0.98	0.43

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Happy Canyon Rd & Canyonside Blvd



Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2239	138	124	2093	0	208
Future Vol, veh/h	2239	138	124	2093	0	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	150	275	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	0	0	2	2	2
Mvmt Flow	2488	153	138	2326	0	231

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2641	0	-	1244
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	5.3	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.1	-	-	3.92
Pot Cap-1 Maneuver	-	-	416	-	0	*394
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %	-	-	1	-		1
Mov Cap-1 Maneuver	-	-	416	-	-	*394
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	26.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	-	-	416	-
HCM Lane V/C Ratio	0.587	-	-	0.331	-
HCM Control Delay (s)	26.3	-	-	17.9	-
HCM Lane LOS	D	-	-	C	-
HCM 95th %tile Q(veh)	3.6	-	-	1.4	-

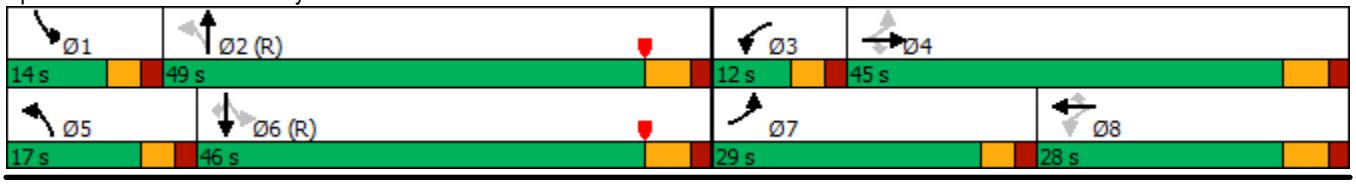
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	246	2	209	73	5	108	180	1059	74	1511	185
Future Volume (vph)	246	2	209	73	5	108	180	1059	74	1511	185
Lane Group Flow (vph)	273	2	232	81	6	120	200	1236	82	1679	206
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2	1	6	
Permitted Phases	4		4	8		8	2		6		6
Detector Phase	7	4	4	3	8	8	5	2	1	6	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	10.5	24.0	24.0	10.5	24.0	10.5	24.0	24.0
Total Split (s)	29.0	45.0	45.0	12.0	28.0	28.0	17.0	49.0	14.0	46.0	46.0
Total Split (%)	24.2%	37.5%	37.5%	10.0%	23.3%	23.3%	14.2%	40.8%	11.7%	38.3%	38.3%
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
v/c Ratio	0.68	0.01	0.47	0.44	0.06	0.50	0.74	0.66	0.33	1.02	0.25
Control Delay	44.9	38.5	8.5	40.8	54.6	10.4	42.3	23.6	13.1	45.7	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.9	38.5	8.5	40.8	54.6	10.4	42.3	23.6	13.1	45.7	6.4
Queue Length 50th (ft)	175	1	0	46	5	0	98	370	22	~723	18
Queue Length 95th (ft)	255	9	66	84	19	25	177	498	m30	#975	m31
Internal Link Dist (ft)		206			219			288		826	
Turn Bay Length (ft)							200		200		200
Base Capacity (vph)	422	605	671	188	341	424	281	1886	267	1652	826
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.00	0.35	0.43	0.02	0.28	0.71	0.66	0.31	1.02	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 43 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Canyonside Blvd & PA-2 S Access/PA-3 S Access



Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	1593	65	29	1304
Future Vol, veh/h	0	25	1593	65	29	1304
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	200	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	4	0	0	2
Mvmt Flow	0	28	1770	72	32	1449

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	885	0	0	1842	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.2	-
Pot Cap-1 Maneuver	0	288	-	-	335	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	288	-	-	335	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	0.4
HCM LOS	C		

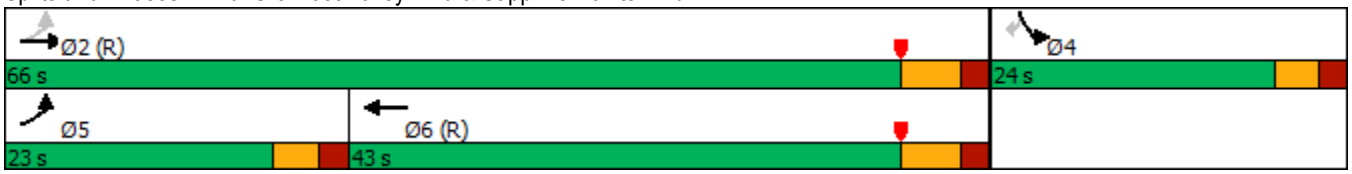
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	288	335	-
HCM Lane V/C Ratio	-	-	0.096	0.096	-
HCM Control Delay (s)	-	-	18.8	16.9	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	-

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Traffic Volume (vph)	209	1552	1508	15	150
Future Volume (vph)	209	1552	1508	15	150
Lane Group Flow (vph)	225	1669	1682	19	190
Turn Type	pm+pt	NA	NA	Prot	Perm
Protected Phases	5	2	6	4	
Permitted Phases	2				4
Detector Phase	5	2	6	4	4
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	24.0	24.0	23.5	23.5
Total Split (s)	23.0	66.0	43.0	24.0	24.0
Total Split (%)	25.6%	73.3%	47.8%	26.7%	26.7%
Yellow Time (s)	3.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Max	C-Max	Max	Max
v/c Ratio	0.70	0.70	0.99	0.05	0.39
Control Delay	28.3	11.4	44.8	28.9	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	11.4	44.8	28.9	7.3
Queue Length 50th (ft)	68	274	471	9	0
Queue Length 95th (ft)	136	349	#738	24	35
Internal Link Dist (ft)		748	1708	1059	
Turn Bay Length (ft)	550				175
Base Capacity (vph)	436	2382	1698	381	487
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.70	0.99	0.05	0.39

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Crowfoot Valley Blvd & Sapphire Pointe Blvd

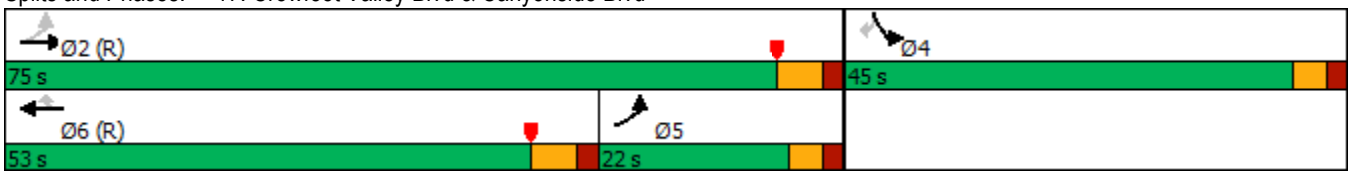


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	289	1278	1238	379	526	310
Future Volume (vph)	289	1278	1238	379	526	310
Lane Group Flow (vph)	321	1420	1376	421	584	344
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	24.0	24.0	24.0	23.5	23.5
Total Split (s)	22.0	75.0	53.0	53.0	45.0	45.0
Total Split (%)	18.3%	62.5%	44.2%	44.2%	37.5%	37.5%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lag		Lead	Lead		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max
v/c Ratio	1.03	0.70	0.99	0.57	0.99	0.48
Control Delay	102.7	20.4	59.1	17.6	71.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.7	20.4	59.1	17.6	71.2	9.0
Queue Length 50th (ft)	~214	390	551	128	451	60
Queue Length 95th (ft)	#399	472	#717	231	#694	132
Internal Link Dist (ft)		1708	1013		5317	
Turn Bay Length (ft)	550			150		
Base Capacity (vph)	312	2034	1386	742	590	716
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.70	0.99	0.57	0.99	0.48

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 17: Crowfoot Valley Blvd & Canyonside Blvd



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	60	300	1009	83	403	1421
Future Volume (vph)	60	300	1009	83	403	1421
Lane Group Flow (vph)	65	326	1097	90	438	1545
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	8	1	2		1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.5	10.5	24.0	24.0	10.5	24.0
Total Split (s)	30.0	32.0	58.0	58.0	32.0	90.0
Total Split (%)	25.0%	26.7%	48.3%	48.3%	26.7%	75.0%
Yellow Time (s)	3.0	3.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	6.0	6.0	5.0	6.0
Lead/Lag		Lead	Lag	Lag	Lead	
Lead-Lag Optimize?		Yes	Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	0.45	0.68	0.50	0.09	0.71	0.51
Control Delay	61.7	39.9	18.6	5.6	52.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	39.9	18.6	5.6	52.6	3.8
Queue Length 50th (ft)	49	196	337	9	166	148
Queue Length 95th (ft)	93	264	m447	m37	210	225
Internal Link Dist (ft)	1614		3668			1711
Turn Bay Length (ft)				200	200	
Base Capacity (vph)	368	546	2205	1014	772	3026
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.60	0.50	0.09	0.57	0.51

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Canyonside Blvd & PA-13 Access

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑↑↱		↰	↑↑↱	
Traffic Vol, veh/h	28	6	2	9	6	55	4	910	17	93	1109	47
Future Vol, veh/h	28	6	2	9	6	55	4	910	17	93	1109	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	7	2	10	7	60	4	989	18	101	1205	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1939	2448	628	1814	2464	504	1256	0	0	1007	0	0
Stage 1	1433	1433	-	1006	1006	-	-	-	-	-	-	-
Stage 2	506	1015	-	808	1458	-	-	-	-	-	-	-
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	39	31	426	49	30	513	550	-	-	684	-	-
Stage 1	141	198	-	258	317	-	-	-	-	-	-	-
Stage 2	517	314	-	341	192	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 24	26	426	35	25	513	550	-	-	684	-	-
Mov Cap-2 Maneuver	~ 24	26	-	35	25	-	-	-	-	-	-	-
Stage 1	140	169	-	256	315	-	-	-	-	-	-	-
Stage 2	444	312	-	278	164	-	-	-	-	-	-	-

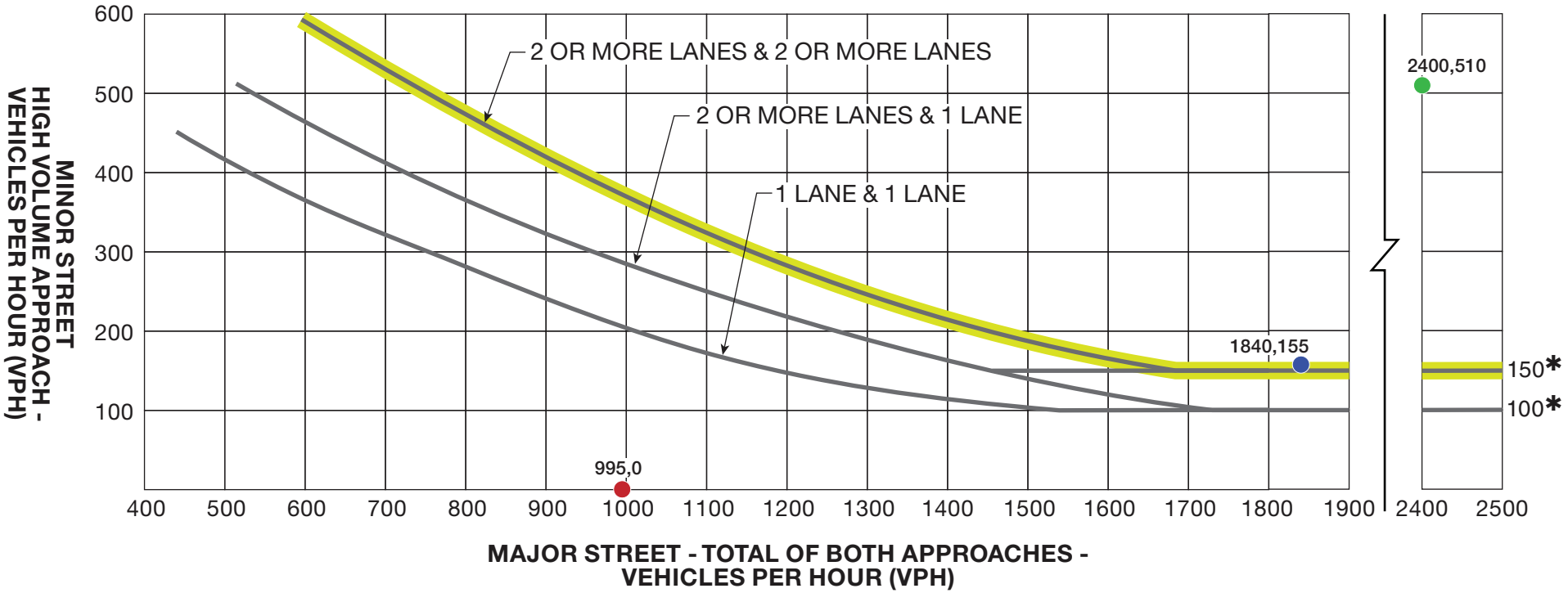
Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 583.7	81.7	0	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	550	-	-	26	116	684	-	-
HCM Lane V/C Ratio	0.008	-	-	1.505	0.656	0.148	-	-
HCM Control Delay (s)	11.6	-	-	$ 583.7	81.7	11.2	-	-
HCM Lane LOS	B	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	4.7	3.4	0.5	-	-

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

APPENDIX D. PEAK HOUR WARRANT EVALUATION

- Warrant 3: Peak Hour..... D-1
- Warrant 3: Peak Hour (70% Factor) D-3



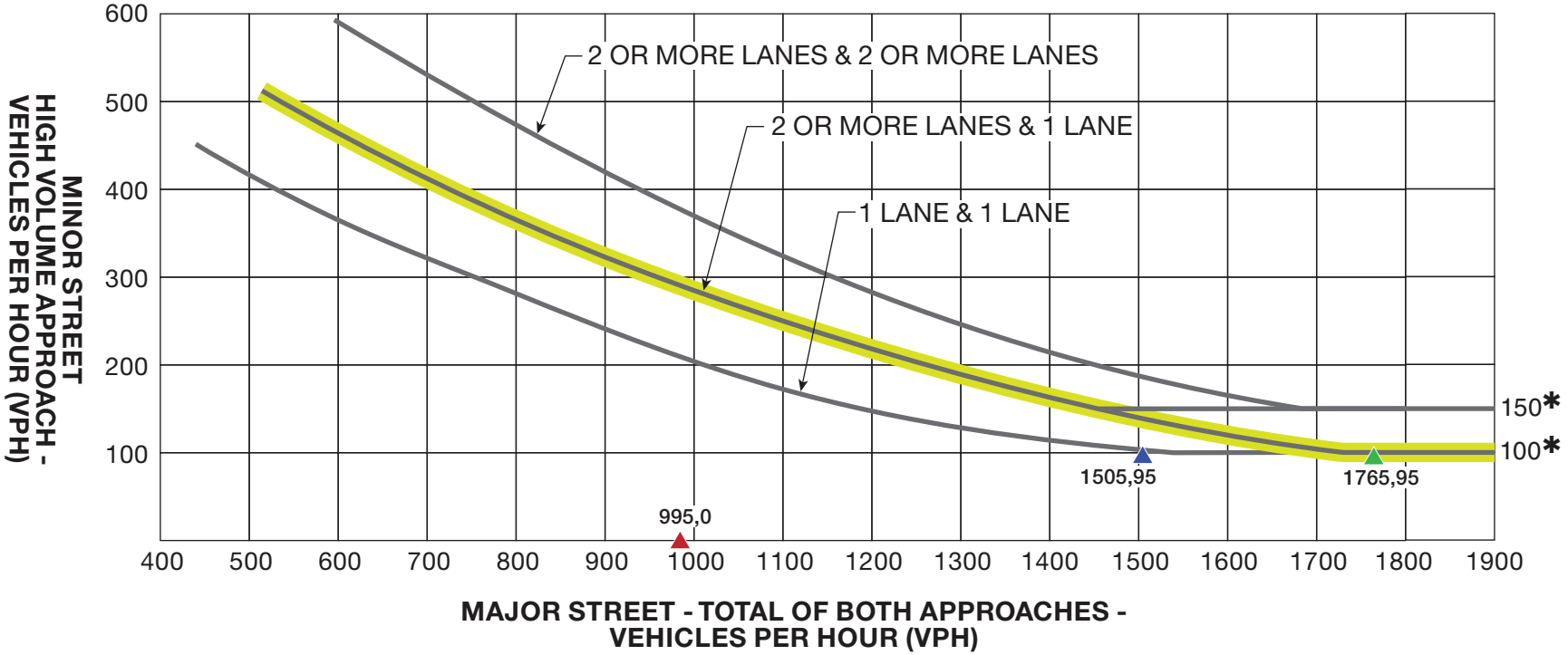
* Note:150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

- = Long-Term Background Traffic ***(Intersection #18)*** Crowfoot Valley Rd. & PA-13 Access
- = Long-Term Total Traffic ***(Intersection #18)*** Crowfoot Valley Rd. & PA-13 Access
- = Long-Term Total Traffic with High School ***(Intersection #18)*** Crowfoot Valley Rd. & PA-13 Access

WARRANT 3

Peak Hour
Crowfoot Valley Road/PA-13 Access (Intersection #18)



* Note:150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

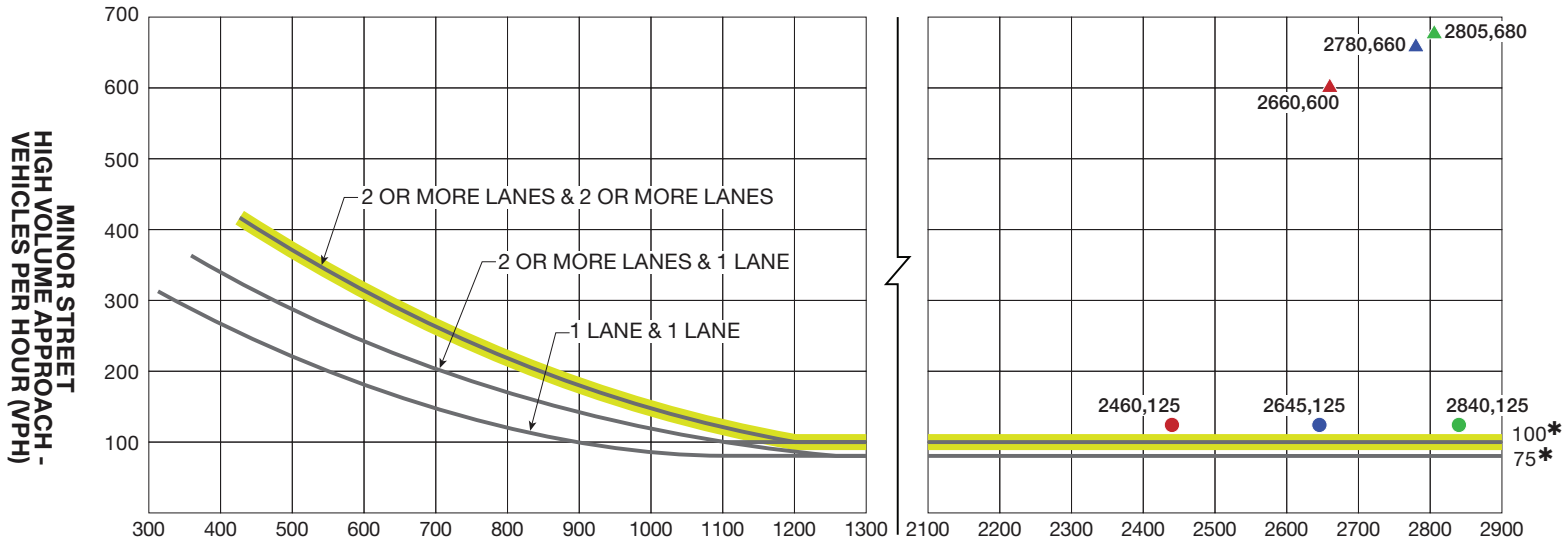
- ▲ = Long-Term Background Traffic ***(Intersection #19)*** Crowfoot Valley Rd. & PA-14/15 Access
- ▲ = Long-Term Total Traffic ***(Intersection #19)*** Crowfoot Valley Rd. & PA-14/15 Access
- ▲ = Long-Term Total Traffic with High School ***(Intersection #19)*** Crowfoot Valley Rd. & PA-14/15 Access

FELSBURG HOLT & ULLEVIG

WARRANT 3

Peak Hour

Crowfoot Valley Road/PA-14/15 Access (Intersection # 19)



**MAJOR STREET - TOTAL OF BOTH APPROACHES -
VEHICLES PER HOUR (VPH)**

* Note:100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

LEGEND

- ● = Long-Term Background Traffic ***(Intersection #16)*** Crowfoot Valley Rd. & Sapphire Pointe Blvd.
- ▲ = Long-Term Background Traffic ***(Intersection #17)*** Crowfoot Valley Rd. & Canyonside Blvd.
- ● = Long-Term Total Traffic ***(Intersection #16)*** Crowfoot Valley Rd. & Sapphire Pointe Blvd.
- ▲ = Long-Term Total Traffic ***(Intersection #17)*** Crowfoot Valley Rd. & Canyonside Blvd.
- ● = Long-Term Total Traffic with High School ***(Intersection #16)*** Crowfoot Valley Rd. & Sapphire Pointe Blvd.
- ▲ = Long-Term Total Traffic with High School ***(Intersection #17)*** Crowfoot Valley Rd. & Canyonside Blvd.

FELSBURG HOLT & ULLEVIG

WARRANT 3

Peak Hour (70% Factor)
(Community Less than 10,000 Population or Above 40 mph On Major Street)