Traffic Technical Memorandum

Fowler Avenue (SR 582) from N. Florida Avenue (Business US 41/SR 685) to N. 56th Street (SR 583)

Project Development & Environment (PD&E) Study

Florida Department of Transportation
District 7

Financial Project ID No. 448505-1-22-01
Hillsborough County, Florida

January 2024

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated December 14, 2016 and executed by FHWA and FDOT.

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Glossary of Terms

Term	Definition
AADT	Annual Average Daily Traffic
ACF	Axle Correction Factor
ADT	Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AGR	Annual Growth Rates
AOI	Area of Influence
BAT	Business Access and Transit
BEBR	Bureau of Economic and Business Research
CAR	Crash Analysis Reporting
CFR	Code of Federal Regulations
CRF	Crash Reduction Factor
CMF	Crash Modification Factor
DDHV	Directional Design Hour Volume
DHT	Design Hour Truck Factor
DRI	Development of Regional Impact
FDOT	Florida Department of Transportation
FHWA	Federal Highway Administration
FTO	Florida Traffic Online
HCM	Highway Capacity Manual
HSM	Highway Safety Manual
IARUG	Interchange Access Request User's Guide
LOS	Level of Service
LRTP	Long Range Transportation Plan
MEV	Million Entering Vehicles
MOCF	Model Output Conversion Factor
MPH	Miles per Hour
MPO	Metropolitan Planning Organization
MPUD	Master Planned Unit Development
MUT	Median U-Turns
MUTCD	Manual on Uniform Traffic Control Devices
NCHRP	National Cooperative Highway Research Project

PD&E	Project Development and Environment
PSWADT	Peak Season Weekday Average Daily Traffic
PTAR	Project Traffic Analysis Report
R-CUT	Restricted Crossing U-Turns
SF	Seasonal Factor
SIS	Strategic Intermodal System
SLD	Straight Line Diagram
SWFWMD	Southwest Florida Water Management District
TBNEXT	Tampa Bay Next
TBRPM	Tampa Bay Regional Planning Model
TMC	Turning Movement Count
TMV	Turning Movement Volume
USF	University of South Florida
WPI	Work Program Item

1.0 Introduction

1.1 Project Overview

This Project Development and Environment (PD&E) Study is for Fowler Avenue (SR 582) from North Florida Avenue (Business US 41/SR 685) to North 56th Street (SR 583) in Hillsborough County. The purpose of this PD&E Study is to analyze transit corridor alternatives, multi-modal improvements, roadway configuration, and bicycle and pedestrian improvements along the above referenced segments of the Fowler Avenue corridor. The PD&E Study will also analyze and assess the Project's impact on the social, economic, cultural, natural, and physical environment, to develop the Location and Design Concept of the Project. The study area is shown in **Figure 1.1.**

Fowler Avenue is in northern Hillsborough County, 1.5 miles north of SR 580 (Busch Boulevard) and 1.0 mile south of SR 579 (CR 582A /Fletcher Avenue). The corridor provides access to major points of interest such as the University of South Florida (USF), Busch Gardens Tampa Bay, and the Moffitt Cancer Center. The corridor also serves as a major mobility connection for the Greater Tampa Bay Region by providing connectivity between US 301, I-75 and I-275.

This Traffic Technical Memorandum provides a summary of the process utilized to compare the traffic operations and safety of several "Build" Alternatives and the "No-Build" Alternative. The Memo includes:

- an overview of the current conditions and traffic operations of Fowler Avenue from North Florida Avenue to North 56th Street;
- a summary of the expected future traffic along Fowler Avenue within the study area; and
- comparisons of how each alternative would perform in the future for users of the Fowler Avenue corridor.

1.2 Purpose and Need

The primary purpose of this project is to analyze three transit concepts along with the No-Build Alternative (i.e., existing conditions). A shared-use-path is also considered throughout the project corridor. The transit alternatives consist of the three following concepts:

- Business Access and Transit (BAT) Lane;
- Frontage Road; and
- Median Transitway.

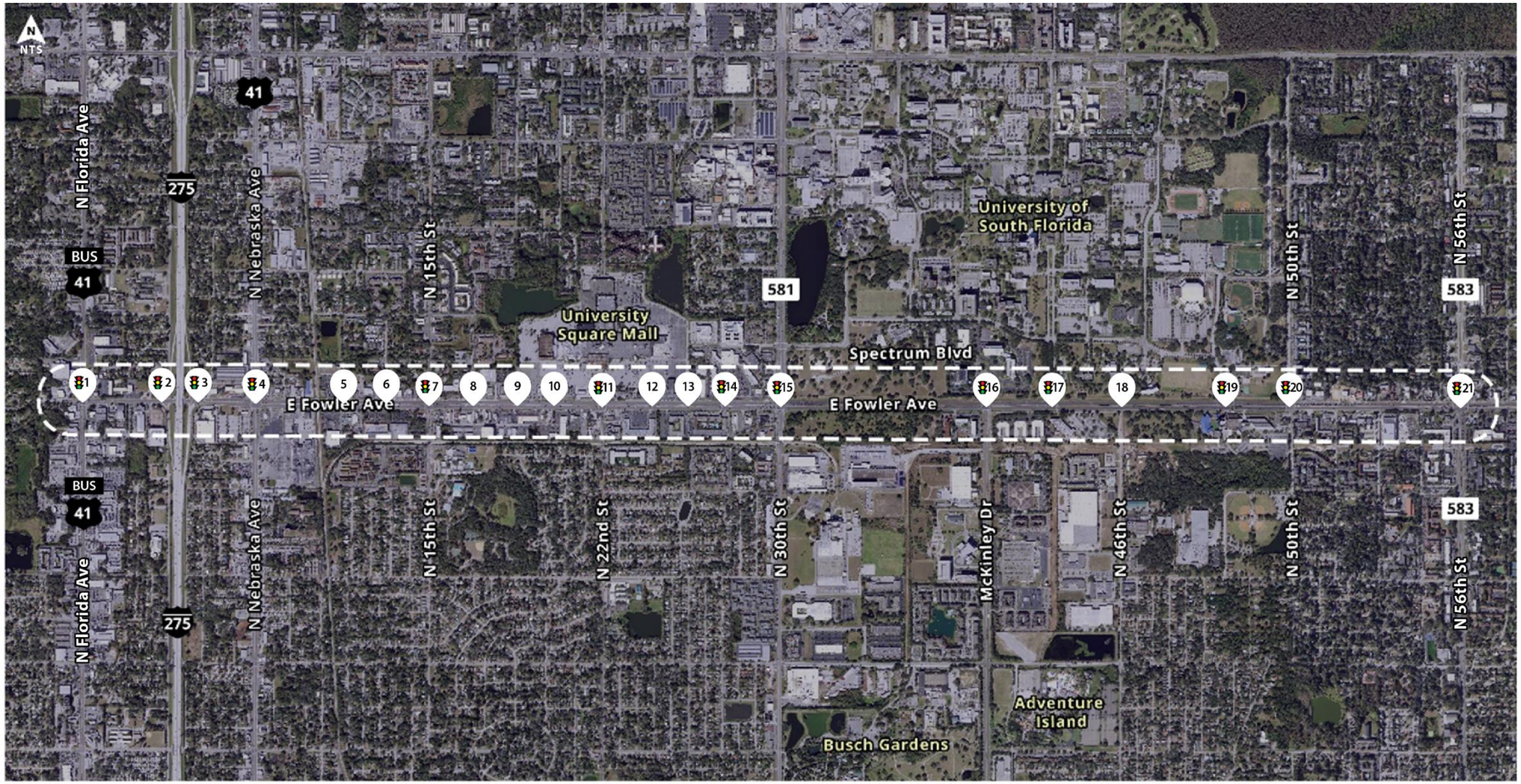
The alternatives identify improvements focused on safety, Transportation Systems Management and Operations (TSM&O) to improve multimodal mobility and accessibility along the study corridor to accommodate future regional growth, multimodal access to transit, enhanced bicycle and pedestrian infrastructure, and connectivity to the surrounding roadway network.

Figure 1.1

Project Location Map

Legend

- Study Area
- Signalized Intersection
- Unsignalized Intersection



Study Intersections

1. N Florida Ave at E Fowler Ave
2. E Fowler Ave at I-275 SB On Ramp
3. E Fowler Ave at I-275 NB Off Ramp
4. E Fowler Ave at US Highway 41 (North Nebraska Avenue)
5. E Fowler Ave at N 12th St
6. E Fowler Ave at N 14th St
7. E Fowler Ave at N 15th St
8. E Fowler Ave at N 17th St
9. E Fowler Ave at N 19th St
10. E Fowler Ave at Univ. Town Center Entrance west
11. E Fowler Ave at N 22nd St
12. E Fowler Ave at Univ. Town Center Entrance east
13. E Fowler Ave at Club Dr
14. E Fowler Ave at The Univ. Collection Entrance
15. E Fowler Ave at Bruce B. Downs Blvd
16. E Fowler Ave at McKinley Dr
17. E Fowler Ave at Leroy Collins Blvd
18. E Fowler Ave at N 46th St
19. E Fowler Ave at USF Bull Run Dr
20. E Fowler Ave at N 50th St
21. E Fowler Ave at N 56th St

1.3 Methodology

This report will be conducted utilizing methodologies and principles established as best practice by the FDOT. The FDOT approved methodology for this report can be found in **Appendix A**.

2.0 Existing Conditions

2.1 Data Collection

Traffic count data was collected for the Fowler Avenue PD&E study area for the development of existing year (2022) traffic volumes. As part of the PD&E Study, 72-hour bi-directional (approach and departure volumes at 15-minute increments) machine classification counts, 72-hour bi-directional (approach and departure volumes at 15-minute increments) approach counts, 2-hour AM (from 7:00 AM to 9:00 AM), and 2-hour PM (from 4:00 PM to 6:00 PM) turning movement, pedestrian, and bicycle counts were collected the week of April 25th, 2022. Travel time data was verified utilizing INRIX vehicle probe data and observed speeds at approach count locations. These counts are summarized below.

72-hour Bi-Directional Intersection Approach Count Locations

- University Town Center west entrance (unsignalized)
- University Town Center main entrance (signalized)
- University Town Center east entrance (unsignalized)
- University Collections main entrance north of Fowler Avenue

72-hour Vehicle Classification Count Locations:

- W. Country Club Drive west of Florida Avenue
- Florida Avenue north of Fowler Avenue
- Fowler Avenue between Florida Avenue and SB I-275 Ramps
- Florida Avenue south of Fowler Avenue
- I-275 SB Off-Ramp north of Fowler Avenue
- I-275 SB On-Ramp south of Fowler Avenue
- I-275 NB On-Ramp north of Fowler Avenue
- I-275 NB Off-Ramp south of Fowler Avenue
- Fowler Avenue between I-275 NB Ramps and Nebraska Avenue
- Nebraska Avenue north of Fowler Avenue
- Fowler Avenue east of Nebraska Avenue
- Nebraska Avenue south of Fowler Avenue
- Fowler Avenue west of 15th Street
- 15th Street north of Fowler Avenue
- Fowler Avenue east of 15th Street
- 15th Street south of Fowler Avenue
- 19th Street north of Fowler Avenue
- Fowler Avenue west of 22nd Street
- Fowler Avenue east of 22nd Street
- 22nd Street south of Fowler Avenue
- Club Drive north of Fowler Avenue
- Fowler Avenue west of University Collections main entrance

- Fowler Avenue west of Bruce B Downs Boulevard
- Quality Inn driveway south of Fowler Avenue (Data not collected due to construction fence)
- Bruce B Downs Boulevard north of Fowler Avenue
- Fowler Avenue east of Bruce B Downs Boulevard
- 30th Street south of Fowler Avenue
- Spectrum Boulevard north of Fowler Avenue
- Fowler Avenue east of Spectrum Boulevard/McKinley Drive
- McKinley Drive south of Fowler Avenue
- LeRoy Collins Boulevard north of Fowler Avenue
- Fowler Avenue between LeRoy Collins Boulevard and 46th Street
- Fowler Avenue east of 46th Street
- 46th Street south of Fowler Avenue
- USF Bull Run Drive north of Fowler Avenue
- Fowler Avenue between USF Bull Run Drive/MOSI driveway and 50th Street
- MOSI driveway south of Fowler Avenue
- 50th Street north of Fowler Avenue
- Fowler Avenue east of 50th Street
- 50th Street south of Fowler Avenue
- Fowler Avenue west of 56th Street
- 56th Street north of Fowler Avenue
- Fowler Avenue east of 56th Street
- 56th Street south of Fowler Avenue

4-hour Turning Movement Count Locations:

- Fowler Avenue at Florida Avenue
- Fowler Avenue at SB I-275 Ramps
- Fowler Avenue at NB I-275 Ramps
- Fowler Avenue at Nebraska Avenue
- Bi-directional median opening at 12th Street (EB/WB only)
- Bi-directional median opening at 14th Street (EB/WB only)
- Fowler Avenue at 15th Street
- Bi-directional median opening at 17th Street (EB/WB only)
- Fowler Avenue at 19th Street (unsignalized)
- Fowler Avenue at University Town Center west entrance (unsignalized)
- Fowler Avenue at 22nd Street
- Fowler Avenue at University Town Center east entrance (unsignalized)
- Fowler Avenue at Club Drive (unsignalized)
- Fowler Avenue at University Collections main entrance/Quality Inn driveway
- Fowler Avenue at Bruce B Downs Boulevard
- Fowler Avenue at Spectrum Boulevard/McKinley Drive
- Fowler Avenue at Lee Roy Collins Boulevard

- Fowler Avenue at USF Bull Run Drive/MOSI driveway
- Fowler Avenue at 50th Street
- Fowler Avenue at 56th Street

2.2 Existing Roadway Characteristics

Fowler Avenue, within the study area, is an Urban Principal Arterial Other with a speed limit ranging from 40 to 50 mph along the study length. Fowler Avenue roadway characteristics for each segment being analyzed in the study area can be found in **Table 2.1**. The straight-line diagrams for this information can be found in **Appendix B**. The existing lane geometry for each of the study intersections is shown in **Figure 2.2**.

Table 2.1: Existing Year (2022) Roadway Characteristics

Segment	Functional Classification	Length (mi)	Speed Limit (mph)	Typical Section
Fowler Avenue				
N Florida Avenue to NB I-275 Ramp Terminal	Urban Principal Arterial Other	0.327	40	Four-Lane Divided
NB I-75 Ramp Terminal to Nebraska Avenue	Urban Principal Arterial Other	0.178	40	Six-Lane Divided
Nebraska Avenue to East of Rail Crossing	Urban Principal Arterial Other	0.215	40	Eight-Lane Divided
East of Rail Crossing to Bruce B Downs Boulevard	Urban Principal Arterial Other	1.316	45	Eight-Lane Divided
Bruce B Downs Boulevard to 56th Street	Urban Principal Arterial Other	1.983	50	Six-Lane Divided

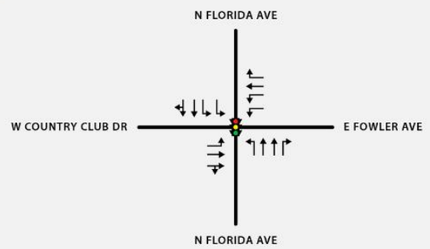
Figure 2.2

Existing Year (2022) Intersection Lane Geometry (1)

Legend

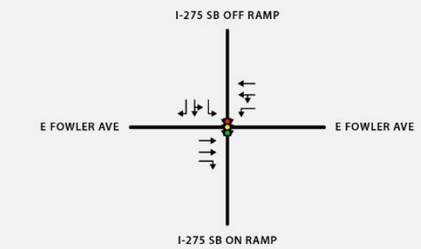
(#) Study Intersection

1 — N Florida Ave at E Fowler Ave



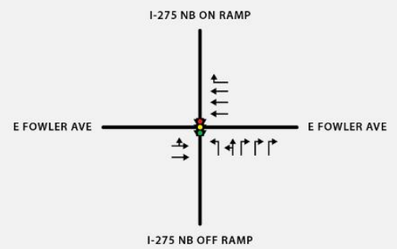
Legend: Signal

2 — E Fowler Ave at I-275 SB On Ramp



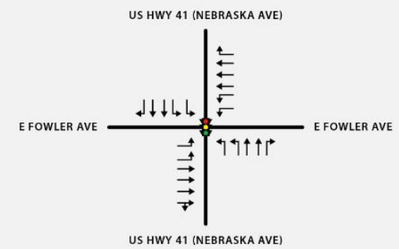
Legend: Signal

3 — E Fowler Ave at I-275 NB Off Ramp



Legend: Signal

4 — E Fowler Ave at US HWY 41 (N Nebraska Ave)



Legend: Signal

5 — E Fowler Ave at N 12th St

Legend: Stop Control

6 — E Fowler Ave at N 14th St

Legend: Stop Control

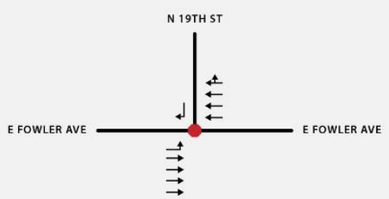
7 — E Fowler Ave at N 15th St

Legend: Signal

8 — E Fowler Ave at N 17th St

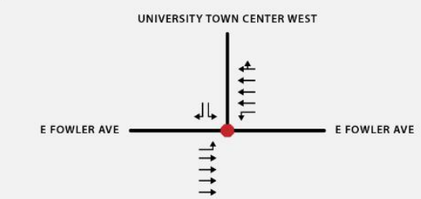
Legend: Stop Control

9 — E Fowler Ave at N 19th St



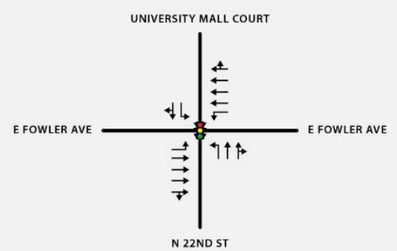
Legend: Stop Control

10 — E Fowler Ave at University Town Center West



Legend: Stop Control

11 — E Fowler Ave at N 22nd St



Legend: Signal

12 — E Fowler Ave at University Town Center East

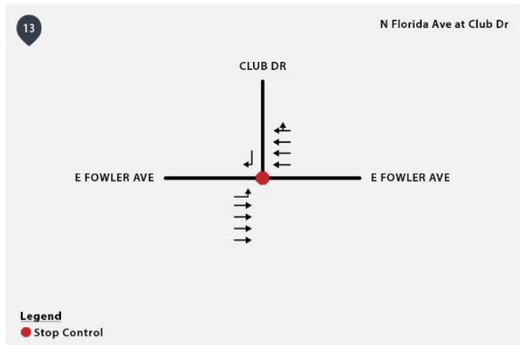
Legend: Stop Control

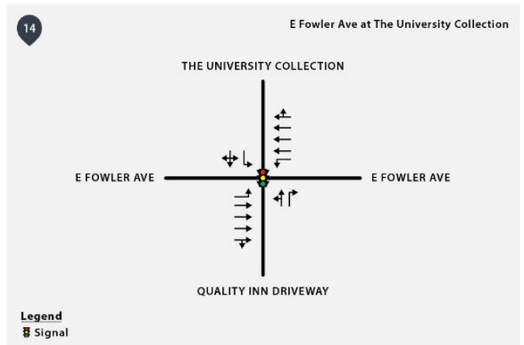
Figure 2.2

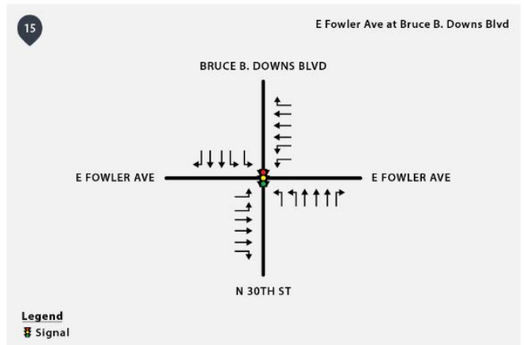
Existing Year (2022) Intersection Lane Geometry (2)

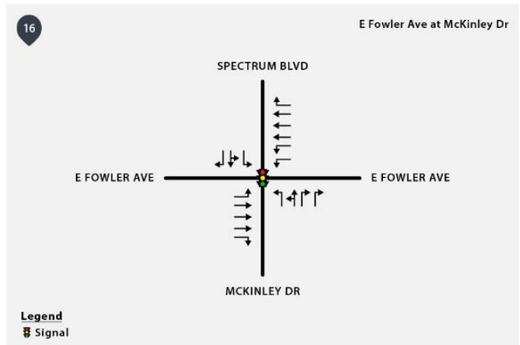
Legend

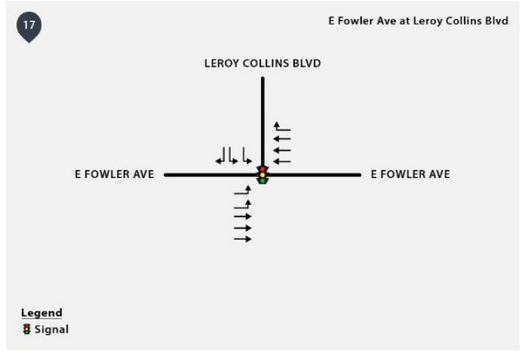
Study Intersection

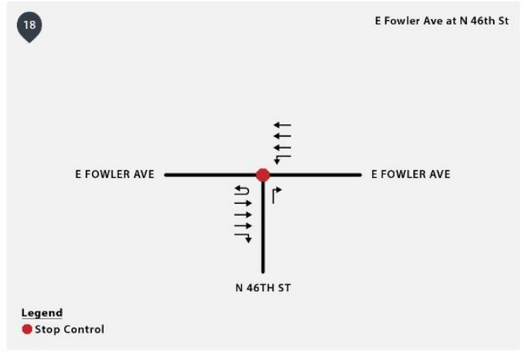


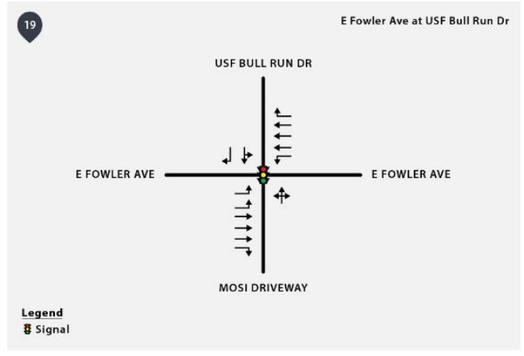


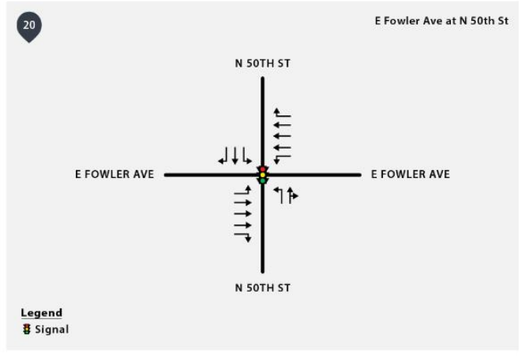


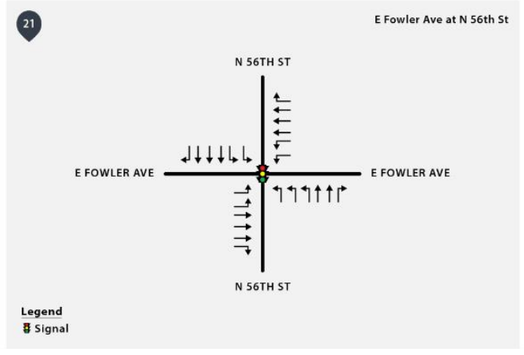












2.3 Existing Year (2022) Volume Development

2.3.1 Existing Year (2022) AADTs

The existing year (2022) Annual Average Daily Traffic (AADT) volumes were developed using the 72-hour approach and 72-hour classification counts, collected between April 26 and April 28 of 2022, and calculating their daily average to develop the Average Daily Traffic (ADT) throughout the corridor. To normalize the ADT to AADT, two adjustment factors, an axle correction factor (ACF) of 0.98, and a seasonal factor (SF) of 0.98 were applied to ADT to yield existing year (2022) AADTs.

FDOT Florida Traffic Online (FTO) database counts were used as a point of comparison to check the field count reasonability. AADTs were reviewed throughout the study area to ensure demand throughout the network did not represent any unreasonable imbalance. Existing year AADTs are represented in **Table 2.2** and **Table 2.3** and illustrated in **Figure 2.3**.

Table 2.2: Existing Year (2022) AADTs – Fowler Avenue

Description	Area Type	FTO Site	FTO 2021 AADT	Field Collected 2022 AADT	Recommended 2022 AADT
Fowler Avenue					
W. Country Club Drive west of Florida Avenue	Urban	109068	2,000	5,800	**5,800**
Between Florida Avenue and I-275 Southbound Ramps	Urban	105215	20,500	20,000	**20,000**
Between I-275 Northbound Ramps and Nebraska Avenue	Urban	105214	54,000	50,000	**50,000**
East of Nebraska Avenue	Urban	100321	51,521	57,500	**57,500**
West of 15th Street	Urban	100321	51,521	56,000	**56,000**
East of 15th Street	Urban	100321	51,521	55,000	**55,000**
West of 22nd Street	Urban	100321	51,521	52,000	**52,000**
East of 22nd Street	Urban	100321	51,521	52,000	**52,000**
West of University Collections main entrance	Urban	100321	51,521	51,000	**51,000**
West of Bruce B Downs Boulevard	Urban	100321	51,521	56,000	**56,000**
East of Bruce B Downs Boulevard	Urban	105204	65,500	60,000	**60,000**
East of Spectrum Boulevard/McKinley Drive	Urban	105204	65,500	54,500	**54,500**
Between LeRoy Collins Boulevard and 46th Street	Urban	105204	65,500	60,500	**60,500**
Between USF Bull Run Drive/MOSI driveway and 50th Street	Urban	105204	65,500	61,500	**61,500**
East of 50th Street	Urban	105204	65,500	62,000	**62,000**
West of 56th Street	Urban	105204	65,500	59,000	**62,000**
East of 56th Street	Urban	100118	52,500	54,500	**54,500**

Table 2.3: Existing Year (2022) AADTs – Fowler Avenue Cross Streets

Description	Area Type	FTO Site	FTO 2021 AADT	Field Collected 2022 AADT	Existing Year (2022) AADT
Fowler Avenue Cross Streets					
Florida Avenue north of Fowler Avenue	Urban	100062	22,000	23,500	**23,500**
Florida Avenue south of Fowler Avenue	Urban	105061	19,700	23,500	**23,500**
I-275 SB Off-Ramp north of Fowler Avenue	Urban	102608	4,900	8,100	**8,100**
I-275 SB On-Ramp south of Fowler Avenue	Urban	102610	16,500	18,500	**18,500**
I-275 NB On-Ramp north of Fowler Avenue	Urban	102609	7,000	7,000	**7,000**
I-275 NB Off-Ramp south of Fowler Avenue	Urban	102611	16,000	16,000	**16,000**
Nebraska Avenue north of Fowler Avenue	Urban	105237	25,000	26,500	**26,500**
Nebraska Avenue south of Fowler Avenue	Urban	105088	21,500	22,000	**22,000**
15th Street north of Fowler Avenue	Urban	N/A	N/A	8,400	**8,400**
15th Street south of Fowler Avenue	Urban	109130	3,600	8,300	**8,300**
19th Street north of Fowler Avenue	Urban	N/A	N/A	4,100	**4,100**
University Town Center west entrance (unsignalized)	Urban	N/A	N/A	2,300	**2,300**
University Town Center main entrance (signalized)	Urban	N/A	N/A	4,700	**4,700**
22nd Street south of Fowler Avenue	Urban	109153	8,200	8,400	**8,400**
University Town Center east entrance (unsignalized)	Urban	N/A	N/A	2,300	**2,300**
Club Drive north of Fowler Avenue	Urban	N/A	N/A	3,300	**3,300**
University Collections main entrance north of Fowler Avenue	Urban	N/A	N/A	6,700	**6,700**
Bruce B Downs Boulevard north of Fowler Avenue	Urban	109179	50,500	45,000	**45,000**
30th Street south of Fowler Avenue	Urban	N/A	N/A	31,000	**31,000**
Spectrum Boulevard north of Fowler Avenue	Urban	N/A	N/A	3,100	**3,100**
McKinley Drive south of Fowler Avenue	Urban	109161	33,000	20,000	**20,000**
LeRoy Collins Boulevard north of Fowler Avenue	Urban	N/A	N/A	10,000	**10,000**
USF Bull Run Drive north of Fowler Avenue	Urban	N/A	N/A	4,600	**4,600**
MOSI driveway south of Fowler Avenue	Urban	N/A	N/A	250	**250**
50th Street north of Fowler Avenue	Urban	109155	8,300	9,400	**9,400**
50th Street south of Fowler Avenue	Urban	N/A	N/A	6,200	**6,200**
56th Street north of Fowler Avenue	Urban	105732	19,300	28,500	**28,500**
56th Street south of Fowler Avenue	Urban	105230	33,500	31,000	**31,000**

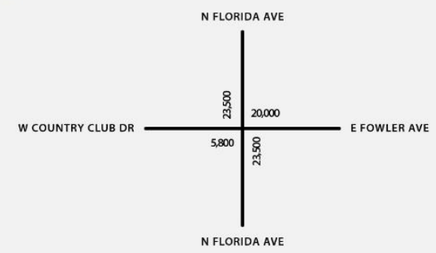
Figure 2.3

Existing Year (2022) AADT (1)

Legend

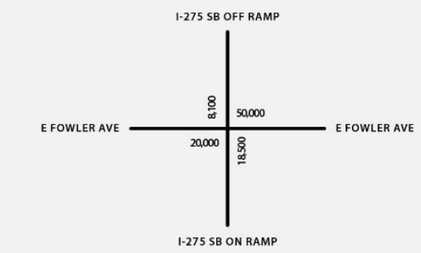
(#) Study Intersection

1 — N Florida Ave at E Fowler Ave



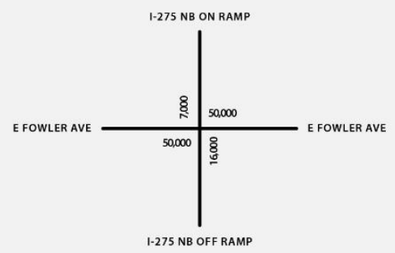
Legend
AADT - X,XXX

2 — E Fowler Ave at I-275 SB On Ramp



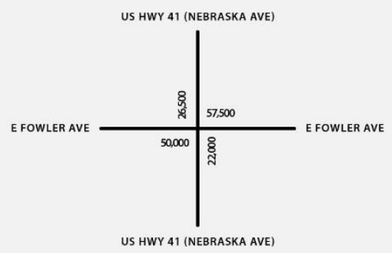
Legend
AADT - X,XXX

3 — E Fowler Ave at I-275 NB Off Ramp



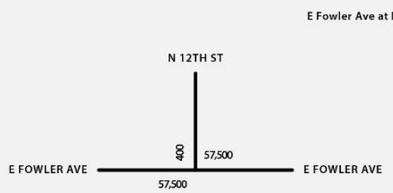
Legend
AADT - X,XXX

4 — E Fowler Ave at US HWY 41 (N Nebraska Ave)



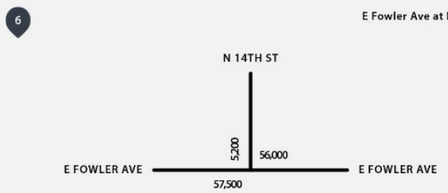
Legend
AADT - X,XXX

5 — E Fowler Ave at N 12th St



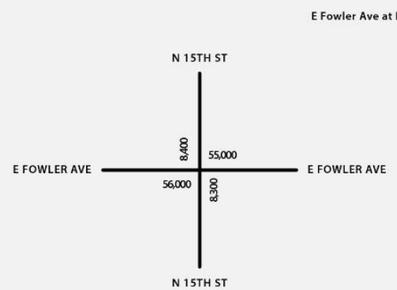
Legend
AADT - X,XXX

6 — E Fowler Ave at N 14th St



Legend
AADT - X,XXX

7 — E Fowler Ave at N 15th St



Legend
AADT - X,XXX

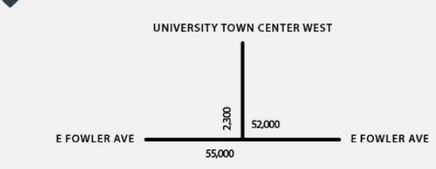
8 — E Fowler Ave at N 17th St

Legend
AADT - X,XXX

9 — E Fowler Ave at N 19th St

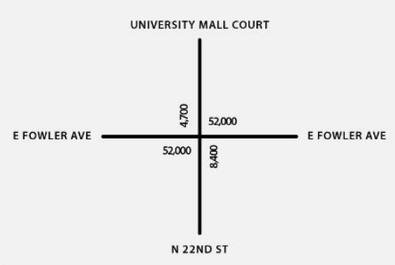
Legend
AADT - X,XXX

10 — E Fowler Ave at University Town Center West



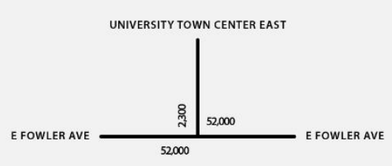
Legend
AADT - X,XXX

11 — E Fowler Ave at N 22nd St



Legend
AADT - X,XXX

12 — E Fowler Ave at University Town Center East



Legend
AADT - X,XXX

Figure 2.3

Existing Year (2022) AADT (2)

Legend

Study Intersection

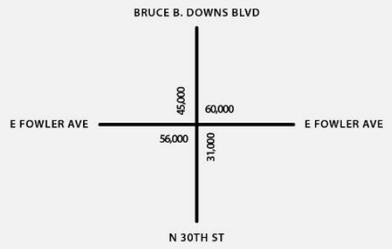
13 N Florida Ave at Club Dr

Legend
AADT - X,XXX

14 E Fowler Ave at The University Collection

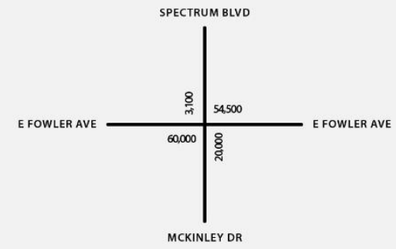
Legend
AADT - X,XXX

15 E Fowler Ave at Bruce B. Downs Blvd



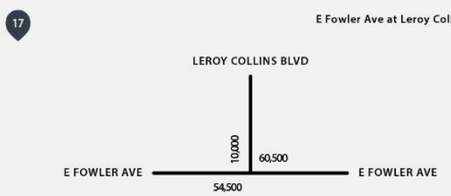
Legend
AADT - X,XXX

16 E Fowler Ave at McKinley Dr



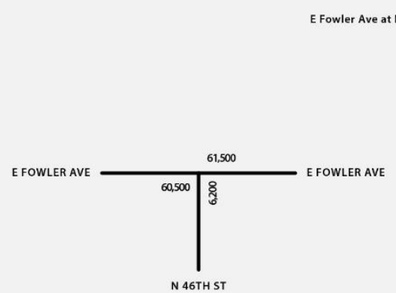
Legend
AADT - X,XXX

17 E Fowler Ave at Leroy Collins Blvd



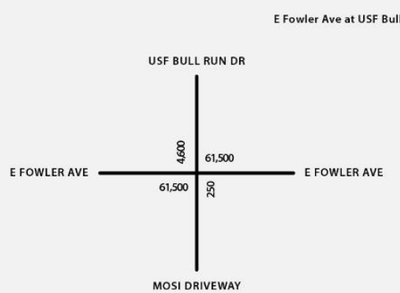
Legend
AADT - X,XXX

18 E Fowler Ave at N 46th St



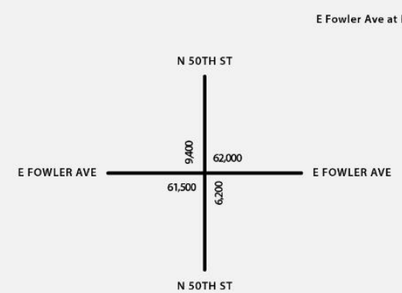
Legend
AADT - X,XXX

19 E Fowler Ave at USF Bull Run Dr



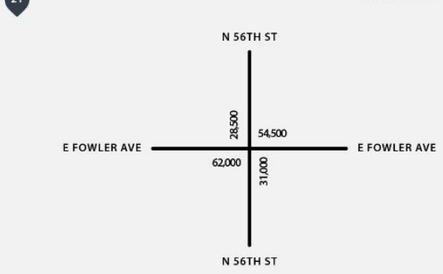
Legend
AADT - X,XXX

20 E Fowler Ave at N 50th St



Legend
AADT - X,XXX

21 E Fowler Ave at N 56th St



Legend
AADT - X,XXX

2.3.2 Design Traffic Factors

Design traffic factors, including design hour factor (K), directional factor (D), and design hour truck factor (DHT), were developed in accordance with the *FDOT Project Traffic Forecasting Handbook 2021*, and the field collected counts. Based upon the review of the data collection efforts, recommended Design Traffic Factors can be found in **Table 2.4**. Additional details on the development of these traffic factors can be found in **Appendix C.**

Table 2.4: Recommended Design Traffic Factors

Location	K Factor	D Factor	T 24	DHT
Fowler Avenue	0.09	50.4% to 63.0%	4.5%	3.0%
Cross Streets	0.09	50.2% to 67.1%	5.2%	3.0%

2.3.3 Existing Year (2022) Directional Design Hour Volume Development

The existing year (2022) AADTs yielded by this review served as the basis for the development of AM and PM Directional Design Hour Volume (DDHV) and turning movement volumes (TMVs). The existing year (2022) AADT volumes were multiplied by K and D factors to obtain existing year (2022) AM and PM DDHVs. To compute final demand DDHVs, the resultant DDHVs from this method were smoothed and compared to field collected data to check for reasonableness. The DDHVs were adjusted to account for situations where resultant volumes were lower than the measured count data. The initial and balanced existing year DDHVs can be found in **Table 2.5** and **Table 2.6**.

The intersection turning movement counts contained within the study area served as the basis for intersection volume distribution. DDHVs were distributed by field measured turning movement percentages to develop the existing year (2022) demand TMVs. These TMVs were developed to ensure no loss between study intersections, and then checked for reasonableness. Existing year turning movement balanced volumes are provided in **Figure 2.5**.

Table 2.5: Existing Year (2022) DDHVs – Fowler Avenue

Description	2022 AADT	K	D	Sum of Field Turning Movement Counts				Initial DDHVs				Balanced DDHVs				TMC to Balanced DDHV Comparison			
				Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound	
				AM TMCs	PM TMCs	AM TMCs	PM TMCs	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM % diff	PM % diff	AM % diff	PM % diff
Along Fowler Avenue																			
W. Country Club Drive west of Florida Avenue	5,800	9.0%	62.5%	305	189	223	320	326	196	196	326	367	210	262	356	17%	10%	15%	10%
Between Florida Avenue and I-275 Southbound Ramps	20,000	9.0%	50.4%	677	701	924	662	893	907	907	893	854	817	968	841	21%	14%	5%	21%
Between I-275 Northbound Ramps and Nebraska Avenue	50,000	9.0%	63.0%	2140	1387	1213	2498	2,834	1,666	1,666	2,834	2,904	1,654	1,660	2,890	26%	16%	27%	14%
East of Nebraska Avenue	57,500	9.0%	56.9%	2389	1758	1450	2591	2,945	2,230	2,230	2,945	3,031	2,142	2,118	2,974	21%	18%	32%	13%
West of 15th Street	56,000	9.0%	60.4%	2204	1648	1404	2406	3,043	1,997	1,997	3,043	2,751	2,035	2,124	2,809	20%	19%	34%	14%
East of 15th Street	55,000	9.0%	55.9%	2316	1739	1410	2490	2,769	2,181	2,181	2,769	2,967	2,094	1,967	2,900	22%	17%	28%	14%
West of 22nd Street	52,000	9.0%	57.7%	2141	1563	1449	2349	2,700	1,980	1,980	2,700	2,688	1,985	2,000	2,679	20%	21%	28%	12%
East of 22nd Street	52,000	9.0%	55.0%	2162	1569	1391	2372	2,575	2,105	2,105	2,575	2,684	1,998	2,013	2,675	19%	21%	31%	11%
West of University Collections main entrance	51,000	9.0%	54.9%	2293	1793	1498	2580	2,522	2,068	2,068	2,522	2,637	1,930	1,982	2,667	13%	7%	24%	3%
West of Bruce B Downs Boulevard	56,000	9.0%	60.4%	2106	1719	1382	2328	3,043	1,997	1,997	3,043	2,836	2,163	2,215	2,826	26%	21%	38%	18%
East of Bruce B Downs Boulevard	60,000	9.0%	52.8%	2096	2043	1787	2180	2,851	2,549	2,549	2,851	2,715	2,601	2,601	2,705	23%	21%	31%	19%
East of Spectrum Boulevard/McKinley Drive	54,500	9.0%	52.1%	1908	2433	2020	1875	2,348	2,557	2,557	2,348	2,467	2,758	2,768	2,466	23%	12%	27%	24%
Between LeRoy Collins Boulevard and 46th Street	60,500	9.0%	57.0%	1723	2603	2348	1833	2,344	3,101	3,101	2,344	2,338	2,942	2,952	2,339	26%	12%	20%	22%
Between USF Bull Run Drive/MOSI driveway and 50th Street	61,500	9.0%	57.2%	1763	2466	2399	1915	2,369	3,166	3,166	2,369	2,289	3,070	3,113	2,289	23%	20%	23%	16%
East of 50th Street	62,000	9.0%	59.1%	1935	2552	2155	1871	2,283	3,297	3,297	2,283	2,185	3,038	3,038	2,185	11%	16%	29%	14%
West of 56th Street	59,000	9.0%	55.8%	1822	2597	2336	1934	2,344	2,966	2,966	2,344	2,185	3,038	3,038	2,185	17%	15%	23%	11%
East of 56th Street	54,500	9.0%	61.8%	1859	2725	2323	1816	1,873	3,032	3,032	1,873	2,067	3,067	3,067	1,994	10%	11%	24%	9%

Table 2.6: Existing Year (2022) DDHVs – Fowler Avenue Cross Streets

Description	2022 AADT	K	D	Sum of Field Turning Movement Counts				Initial DDHVs				Balanced DDHVs				TMC to Balanced DDHV Comparison			
				Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound4		Eastbound/ Northbound		Westbound/ Southbound		Eastbound/ Northbound		Westbound/ Southbound4	
				AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM DDHV	PM DDHV	AM % diff	PM % diff	AM % diff	PM % diff
Fowler Avenue Cross Streets																			
Florida Avenue north of Fowler Avenue	23,500	9.0%	56.7%	692	990	1198	844	916	1,199	1,199	916	990	1,134	1,295	940	30%	13%	7%	10%
Florida Avenue south of Fowler Avenue	23,500	9.0%	55.7%	636	1097	1392	804	936	1,179	1,179	936	916	1,225	1,440	909	31%	10%	3%	12%
I-275 Northern Ramps	15,100	9.0%	63.7%	355	747	864	325	494	865	865	494	447	873	1,121	509	21%	14%	23%	36%
I-275 Southern Ramps	34,500	9.0%	67.0%	1310	780	752	1444	2,082	1,023	1,023	2,082	1,842	1,048	1,158	1,896	29%	26%	35%	24%
Nebraska Avenue north of Fowler Avenue	26,500	9.0%	50.2%	747	921	1010	982	1,197	1,188	1,188	1,197	1,221	1,145	1,147	1,221	39%	20%	12%	20%
Nebraska Avenue south of Fowler Avenue	22,000	9.0%	56.7%	625	867	876	650	857	1,123	1,123	857	883	1,140	1,140	812	29%	24%	23%	20%
15th Street north of Fowler Avenue	8,400	9.0%	56.8%	214	297	289	350	327	429	429	327	360	306	445	360	41%	3%	35%	3%
15th Street south of Fowler Avenue	8,300	9.0%	59.1%	295	284	264	330	442	305	305	442	610	314	322	400	52%	10%	18%	18%
19th Street north of Fowler Avenue	4,100	9.0%	53.9%	121	150	66	133	170	199	199	170	187	191	164	172	35%	21%	60%	23%
University Town Center west entrance (unsignalized)	2,300	9.0%	53.6%	52	135	27	74	111	96	96	111	110	165	189	113	53%	18%	86%	35%
University Town Center main entrance (signalized)	4,700	9.0%	53.5%	108	203	70	172	226	197	197	226	229	212	212	229	53%	4%	67%	25%
22nd Street south of Fowler Avenue	8,400	9.0%	50.8%	258	320	141	306	384	372	372	384	386	386	386	386	33%	17%	63%	21%
University Town Center east entrance (unsignalized)	2,300	9.0%	54.6%	24	98	2	75	94	113	113	94	87	115	133	88	72%	15%	98%	15%
Club Drive north of Fowler Avenue	3,300	9.0%	57.3%	108	130	56	180	170	127	127	170	213	139	81	176	49%	6%	31%	2%
University Collections main entrance north of Fowler Avenue	6,700	9.0%	60.9%					367	236	236	367	332	258	298	332				
Bruce B Downs Boulevard north of Fowler Avenue	45,000	9.0%	54.1%	1572	1272	1649	1734	2,189	1,861	1,861	2,189	2,170	1,775	1,915	2,170	28%	28%	14%	20%
30th Street south of Fowler Avenue	31,000	9.0%	52.1%	770	991	1262	981	1,337	1,453	1,453	1,337	1,313	1,449	1,565	1,285	41%	32%	19%	24%
Spectrum Boulevard north of Fowler Avenue	3,100	9.0%	67.1%	149	70	76	164	187	92	92	187	199	85	97	190	25%	18%	22%	14%
McKinley Drive south of Fowler Avenue	20,000	9.0%	58.1%	565	1091	1047	664	755	1,045	1,045	755	806	1,097	1,119	806	30%	1%	6%	18%
LeRoy Collins Boulevard north of Fowler Avenue	10,000	9.0%	67.1%	464	250	100	589	604	296	296	604	628	315	315	626	26%	21%	68%	6%
USF Bull Run Drive north of Fowler Avenue	4,600	9.0%	66.2%	257	68	53	155	274	140	140	274	310	121	121	275	17%	44%	56%	44%
MOSI driveway south of Fowler Avenue	250	9.0%	67.1%	2	12	5	3	7	15	15	7	6	27	27	3	67%	56%	81%	0%
50th Street north of Fowler Avenue	9,400	9.0%	50.9%	138	330	319	315	430	416	416	430	432	410	453	432	68%	20%	30%	27%
50th Street south of Fowler Avenue	6,200	9.0%	61.6%	151	234	136	243	215	343	343	215	296	346	346	296	49%	32%	61%	18%
56th Street north of Fowler Avenue	28,500	9.0%	53.7%	857	1291	737	1100	1,189	1,376	1,376	1,189	1,210	1,352	1,425	1,210	29%	5%	48%	9%
56th Street south of Fowler Avenue	31,000	9.0%	55.3%	1116	1555	946	1118	1,247	1,543	1,543	1,247	1,224	1,586	1,586	1,224	9%	2%	40%	9%

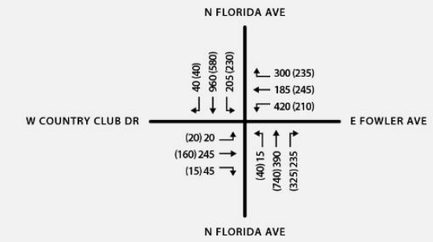
Figure 2.4

Existing Year (2022) Balanced Turning Movement Volumes (1)

Legend

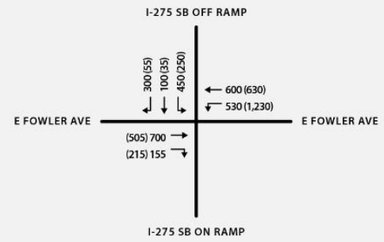
Study Intersection

1 N Florida Ave at E Fowler Ave



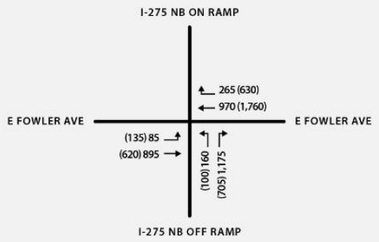
Legend
DDHV - AM (PM)

2 E Fowler Ave at I-275 SB On Ramp



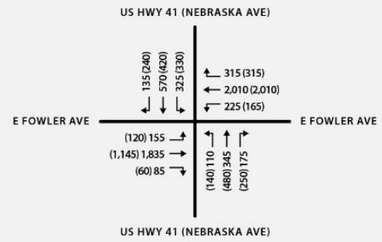
Legend
DDHV - AM (PM)

3 E Fowler Ave at I-275 NB Off Ramp



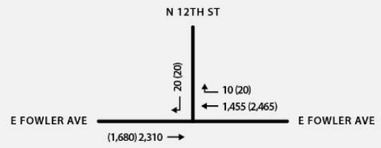
Legend
DDHV - AM (PM)

4 E Fowler Ave at US HWY 41 (N Nebraska Ave)



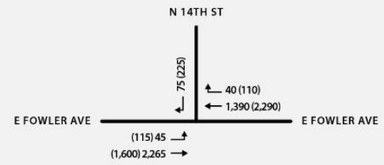
Legend
DDHV - AM (PM)

5 E Fowler Ave at N 12th St



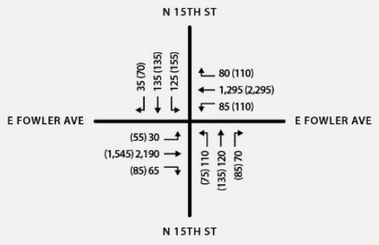
Legend
DDHV - AM (PM)

6 E Fowler Ave at N 14th St



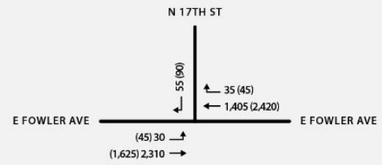
Legend
DDHV - AM (PM)

7 E Fowler Ave at N 15th St



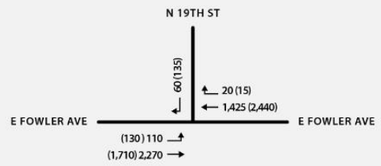
Legend
DDHV - AM (PM)

8 E Fowler Ave at N 17th St



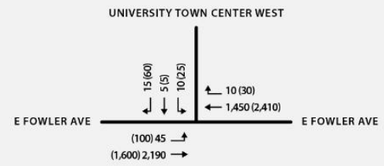
Legend
DDHV - AM (PM)

9 E Fowler Ave at N 19th St



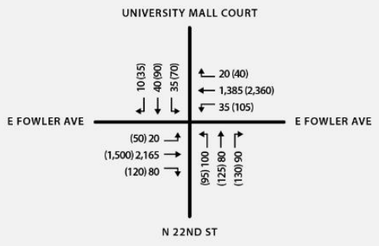
Legend
DDHV - AM (PM)

10 E Fowler Ave at University Town Center West



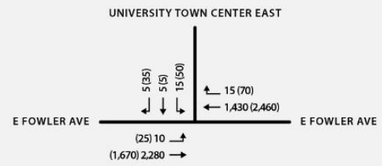
Legend
DDHV - AM (PM)

11 E Fowler Ave at N 22nd St



Legend
DDHV - AM (PM)

12 E Fowler Ave at University Town Center East



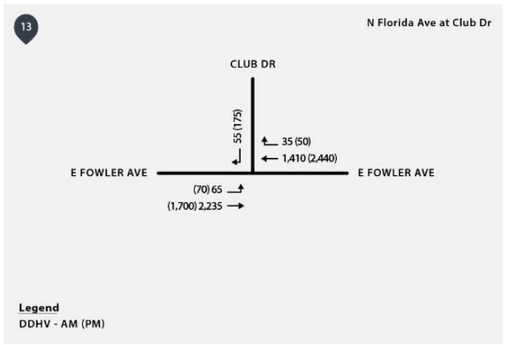
Legend
DDHV - AM (PM)

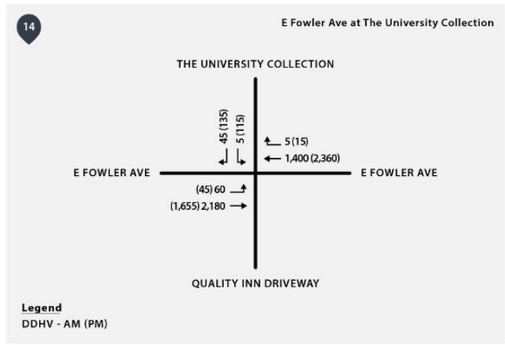
Figure 2.4

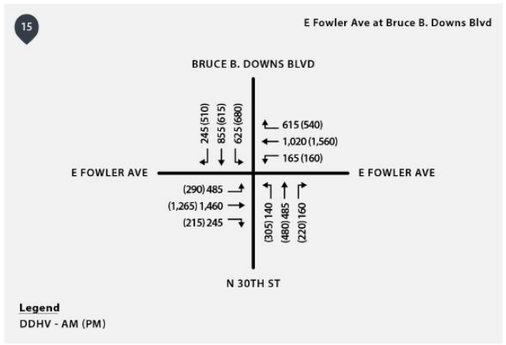
Existing Year (2022) Balanced Turning Movement Volumes (2)

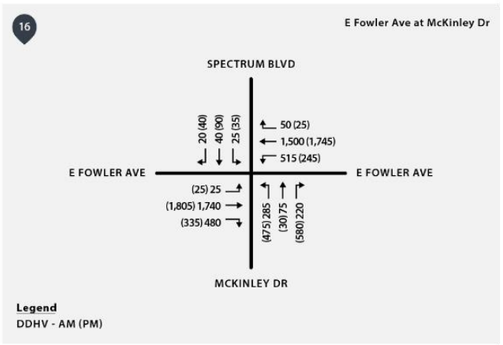
Legend

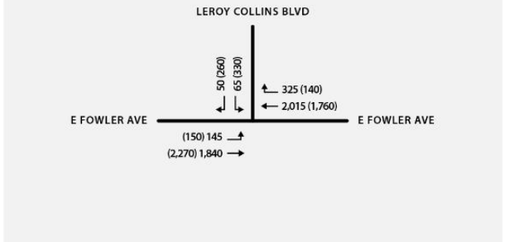
Study Intersection

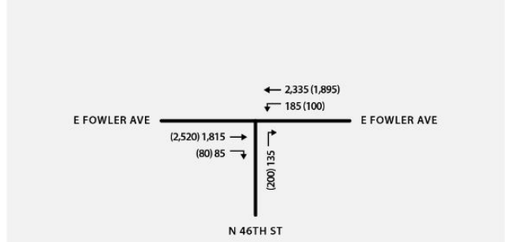


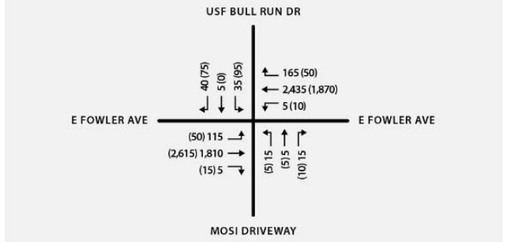


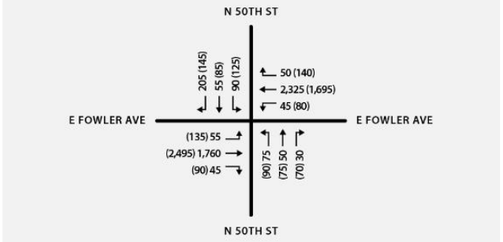












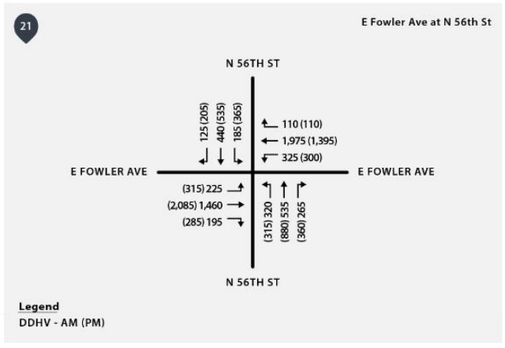


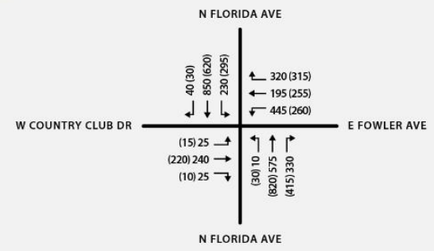
Figure 2.5

Existing Year (2022) Demand Turning Movement Volumes (1)

Legend

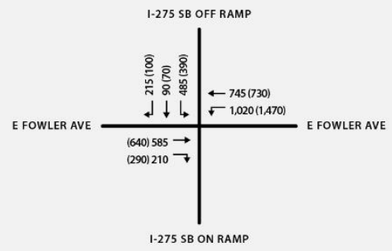
Study Intersection

1 — N Florida Ave at E Fowler Ave



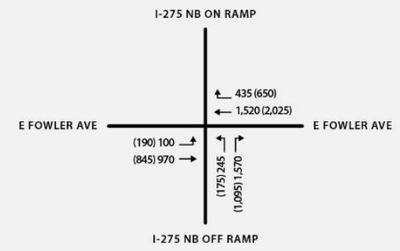
Legend
DDHV - AM (PM)

2 — E Fowler Ave at I-275 SB On Ramp



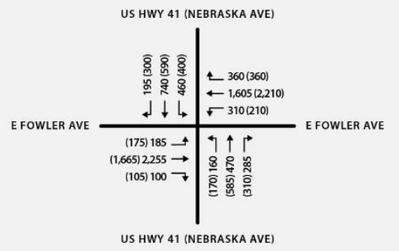
Legend
DDHV - AM (PM)

3 — E Fowler Ave at I-275 NB Off Ramp



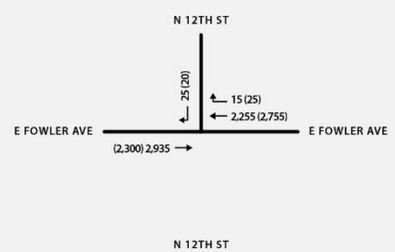
Legend
DDHV - AM (PM)

4 — E Fowler Ave at US HWY 41 (N Nebraska Ave)



Legend
DDHV - AM (PM)

5 — E Fowler Ave at N 12th St



Legend
DDHV - AM (PM)

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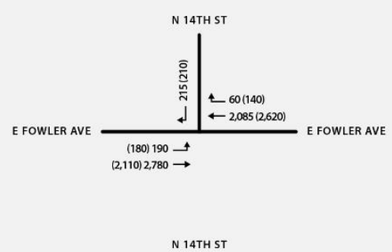

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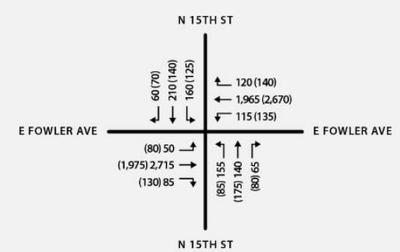
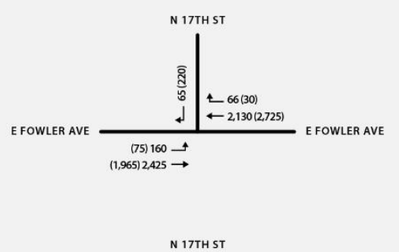
DDHV - AM (PM)

7 — E Fowler Ave at N 15th St



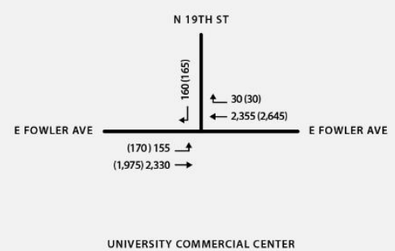
Legend
DDHV - AM (PM)

8 — E Fowler Ave at N 17th St



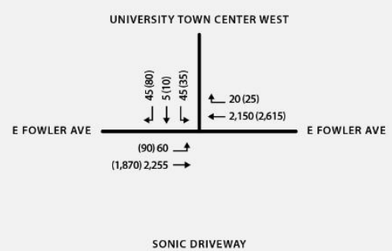
Legend
DDHV - AM (PM)

9 — E Fowler Ave at N 19th St



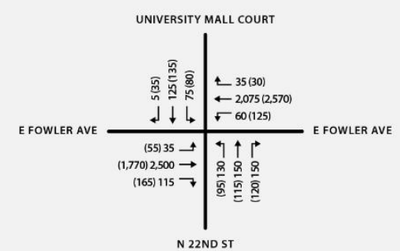
Legend
DDHV - AM (PM)

10 — E Fowler Ave at University Town Center West



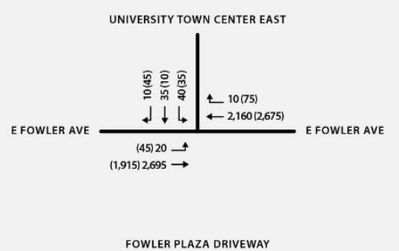
Legend
DDHV - AM (PM)

11 — E Fowler Ave at N 22nd St



Legend
DDHV - AM (PM)

12 — E Fowler Ave at University Town Center East



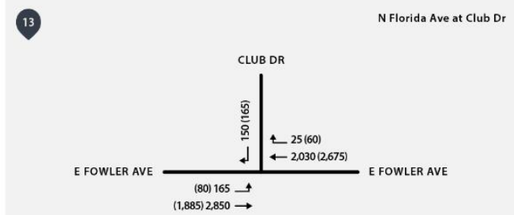
Legend
DDHV - AM (PM)

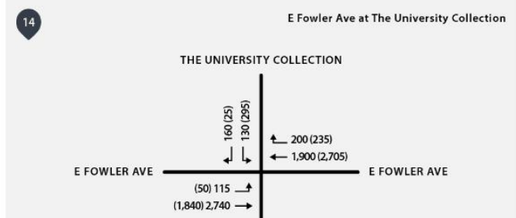
Figure 2.5

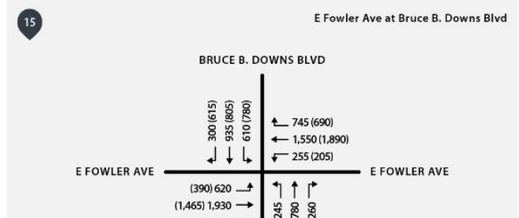
Existing Year (2022) Demand Turning Movement Volumes (2)

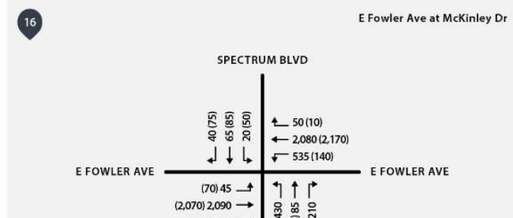
Legend

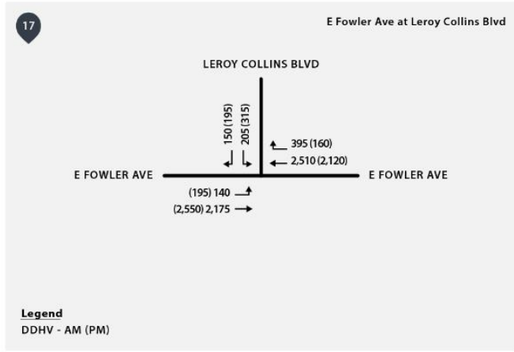
Study Intersection

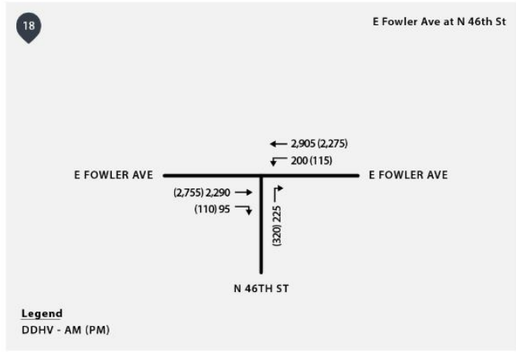


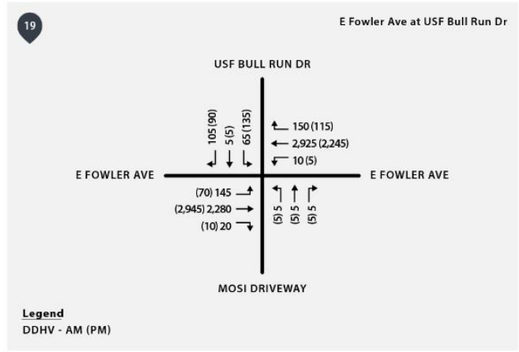


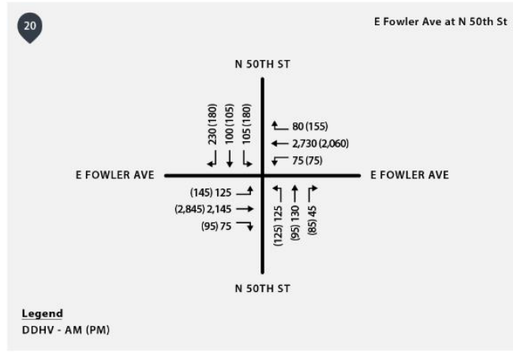


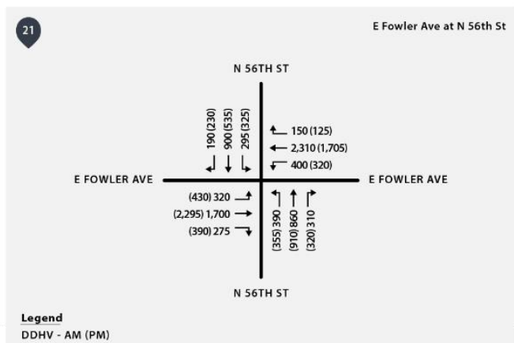












2.3.4 Existing Year (2022) Intersection Delay Analysis

To evaluate the existing year (2022) operational characteristics of the Fowler Avenue study area, an operational analysis using Synchro 11 was used. This operational analysis includes intersection delay and level of service (LOS). Intersection delay analysis was conducted to assess the existing quality of flow at the intersections in the study area using the existing year turning movement volumes with existing geometry and signal timings. A summary of the overall delay is included in **Table 2.7.**

Table 2.7: Existing Year (2022) – Intersection Delay

Intersection	Existing Conditions			
	AM		PM	
	Delay (s/v)	LOS	Delay (s/v)	LOS
Florida Avenue & Country Club Drive/Fowler Avenue	82.9	F	67.3	E
I-275 SB On Ramp/I-275 SB Off Ramp & Fowler Avenue	51.2	D	41.2	D
I-275 NB On Ramp/I-275 NB Off Ramp & Fowler Avenue	63.8	E	36.3	D
Nebraska Avenue & Fowler Avenue	77.7	E	57.7	E
15th Street & Fowler Avenue	49.7	D	63.8	E
22nd Street/University Mall & Fowler Avenue	17.9	B	35.4	D
Quality Inn Entrance/University Collection & Fowler Avenue	9.8	A	6.6	A
30th Street/Bruce B Downs Boulevard & Fowler Avenue	89.3	F	92.8	F
McKinley Drive/Spectrum Boulevard & Fowler Avenue	71.2	E	52.7	D
Fowler Avenue & Leroy Collins Boulevard	17.2	B	20.1	C
MOSI Entrance/Bull Run Drive & Fowler Avenue	13.8	B	7.0	A
50th Street & Fowler Avenue	23.9	C	31.2	C
56th Street & Fowler Avenue	132.4	F	99.4	F

3.0 Design Year (2045) Volume Development

3.1 Horizon Year (2045) Subarea Model Validation

The Tampa Bay Regional Planning Model (TBRPM) 2045 Cost Affordable Network served as the base network for the design year and was reviewed for network attributes such as facility types, area types, speed, and capacity at the subarea level. The 2045 model was also evaluated by comparing the model socio-economic data with the Development of Regional Impact (DRI) projects and Master Planned Unit Development (MPUD) projects approved within the area of influence. Special attention was paid to ensure big redevelopments along the study corridor (e.g., Uptown/Tampa Innovation Partnership; The Yuengling Plaza; The Moffitt Center) were accounted in the model. No changes were made to the subarea zonal data in the Uptown area as the data is consistent with the Uptown development plans. Additionally, all the base year calibration efforts were carried to the future model. **Table 3.1** summarizes the socio-economic updates. Details of the land use change for the new developments can be found in **Appendix D**. As it is shown in **Figure 3.1**, the subarea calibrated 2045 volume is slightly lower than the original TBRPM 2045 volume except for few segments east of McKinley Drive, where the calibrated model volumes are minimally higher.

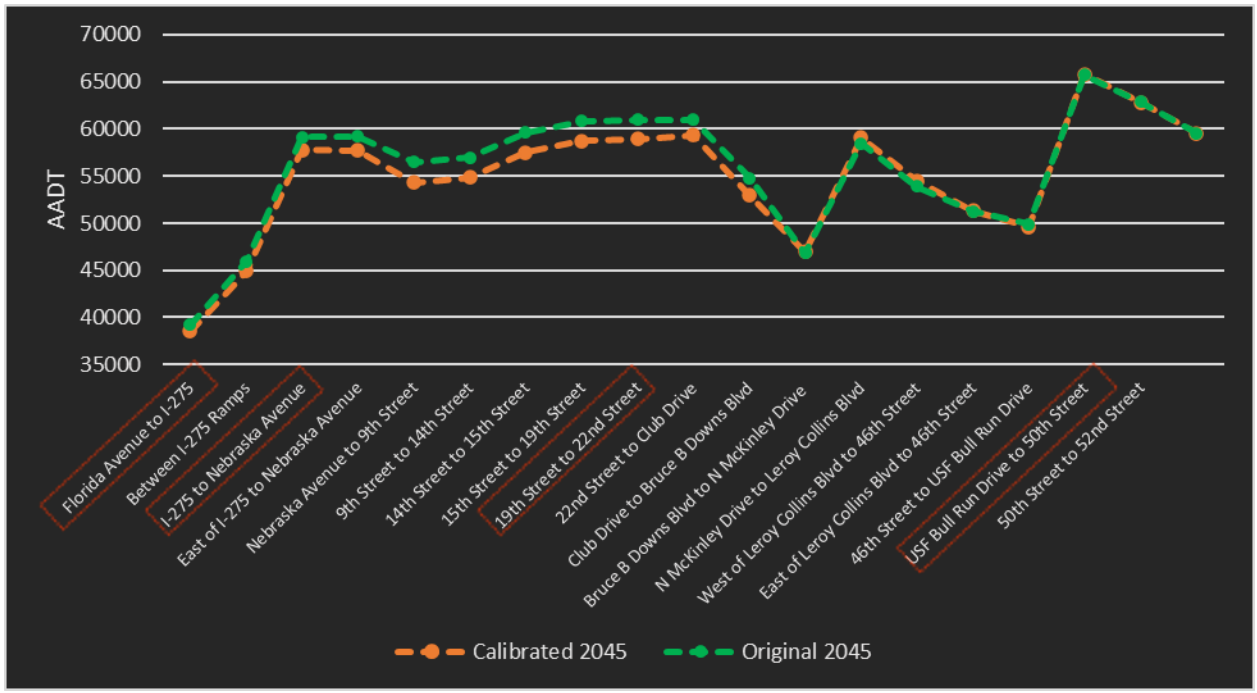


Figure 3.1: Calibrated TBRPM v9.3 Horizon Year (2045) Calibrated and Released Volume Comparison

Table 3.1: Updated TBRPM Horizon Year (2045) Socio-Economic Data Adjustments

Development Land Use Details		Employees (Using ITE 10th Edition Conversion Rates)					Revised TBRPM Year 2045						
Big Blocks	Description	Beds/Units	Industrial Employee	Commercial Employee	Service Employee	Hotel units	TAZ	Industrial Employee	Commercial Employee	Service Employee	Hotel units	GQ Population [2]
Landmark Student Housing	760 bed, 276 unit	760					179					760
Yuengling Center	A 200-room, 140,000-square-foot hotel					200	182		97	1086	350	
	12,700-square-foot restaurant			67								
	7,000-square-foot museum gift shop			2								
	5,500-square-foot microbrewery and/or tasting room			13								
	5,300-square-foot indoor/outdoor beer garden			12								
	5,900 square feet of conference/meeting space				18							
Moffitt Cancer [1] Center (McKinley Drive)	480,000-square-feet [1] (10-story hospital, 600 tradespeople on site each day,128 beds + additional 76 beds in future)				1201		184			3241		

1. McKinley project is an expansion of the existing 1986 facility on USF's Magnolia Drive, not a replacement.

2. Student Housing is coded as Group Quarter population in TBRPM

3.2 Design Year (2045) AADT and DDHV Development

The TBRPM calibrated model 2045 Peak Season Weekday Average Daily Traffic (PSWADT) was converted to 2045 AADTs using the appropriate Model Output Conversion Factor (MOCF) and were reviewed for reasonableness and forecasting consistency. The *National Cooperative Highway Research Project (NCHRP) Report 765* was utilized to adjust the future traffic forecast in accordance with the model variation from the 2022 existing AADTs. An average of the difference and ratio method was taken for most of the segments to establish NCHRP 2045 AADTs, where the ratio of TBRPM Year 2022 interpolated AADT to existing AADT is between 0.5 and 2. Difference method, and ratio method were used when the ratio was higher than 2 and lower than 0.5 respectively. Detailed information can be found in **Appendix E**.

The design year (2045) DDHVs were calculated by applying K and D factors to the design year (2045) AADTs. The resulting DDHVs were distributed throughout the existing study area, and then examined and smoothed to ensure growth for every movement. The resulting DDHVs established the No-Build (8-Lane) and Build (6-Lane) scenario design year (2045) AADTs and turning movement volumes.

The south leg of the intersection at Fowler Avenue and University Collection Main Entrance was closed for developing a student house apartment when the data collection occurred, and there is no existing traffic impact analysis associated at the south leg. This location will be included in design year (2045) forecasts. *Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition*, was utilized to understand the demand related to the location under the design year (2045) volume scenarios. The location is categorized as Off-campus Student Apartment. The distribution of the demand based on ITE Trip Generation can be found in **Table 3.2**. The ITE trip generation calculations can be found in **Appendix F**.

Table 3.2: Student Housing Demand Distribution – Fowler Avenue at University Collection Intersection (South Leg)

Destinations of Production Trips / Origins of Attraction Trips	Percentage of Production Trips	Percentage of Attraction Trips
LeRoy Collins Boulevard north of Fowler Avenue	60%	60%
Bruce B Downs Boulevard north of Fowler Avenue	20%	20%
University Town Center main entrance	8%	8%
56th Street north of Fowler Avenue	5%	5%
56th Street south of Fowler Avenue	5%	5%
University Collections main entrance north of Fowler Avenue	2%	2%

Table 3.3 and Table 3.4 summarize the forecasted 2045 AADTs. No-Build and Build design year (2045) AADTs can be found in **Figure 3.2** and **Figure 3.3**, respectively. No-Build and Build design year (2045) turning movement volumes can be found in **Figure 3.4** and **Figure 3.5**, respectively.

Table 3.3: Design Year (2045) AADT Calculations – Fowler Avenue

Location	NCHRP 765 Ratio & Difference Smoothing Method									
	2022 AADT	TBRPM 2015 AADT	TBRPM 2045 AADT	2022 Interpolated AADT	2045 Smoothed Ratio AADT	2045 Smoothed Difference AADT	2045 Model Smoothed Average AADT	Recommended 2045 No-Build AADT (Fowler 8L)	Recommended 2045 Build AADT (Fowler 6L)	Annual Growth Rate
W. Country Club Drive west of Florida Avenue	5,800	5,779	7,451	6,169	7,005	7,081	7,043	7,000	6,900	0.9%
Between Florida Avenue and I-275 Southbound Ramps	20,000	22,177	37,611	25,778	29,181	31,833	30,507	30,500	30,000	2.3%
Between I-275 Northbound Ramps and Nebraska Avenue	50,000	45,551	58,042	48,466	59,880	59,577	59,728	59,500	57,500	0.8%
East of Nebraska Avenue	57,500	47,787	63,173	51,377	70,701	69,295	69,998	70,000	64,000	0.9%
West of 15th Street	57,500	49,426	66,392	53,385	71,510	70,507	71,008	71,000	64,000	1.0%
East of 15th Street	55,000	50,316	68,326	54,518	68,930	68,808	68,869	69,000	61,500	1.1%
West of 22nd Street	52,000	50,522	68,541	54,726	65,126	65,814	65,470	65,500	61,500	1.1%
East of 22nd Street	52,000	51,277	68,728	55,349	64,570	65,379	64,975	65,000	58,000	1.1%
West of University Collections main entrance	51,000	51,277	68,728	55,349	63,328	64,379	63,854	64,000	58,000	1.1%
West of Bruce B Downs Boulevard	56,000	46,823	62,602	50,505	69,413	68,097	68,755	69,000	62,500	1.0%
East of Bruce B Downs Boulevard	60,000	39,789	45,842	41,201	66,758	64,641	65,699	65,500	67,000	0.4%
East of Spectrum Boulevard/McKinley Drive	54,500	49,669	57,205	51,428	60,623	60,278	60,450	60,500	61,000	0.5%
Between LeRoy Collins Boulevard and 46th Street	60,500	45,953	52,437	47,466	66,836	65,471	66,153	66,000	67,500	0.4%
East of 46th Street	61,500	43,322	48,120	44,441	66,591	65,179	65,885	66,000	68,500	0.3%
Between USF Bull Run Drive/MOSI driveway and 50th Street	61,500	56,542	63,000	58,049	66,745	66,451	66,598	66,500	68,500	0.4%
East of 50th Street	62,000	52,381	60,064	54,173	68,741	67,890	68,316	68,500	69,000	0.5%
West of 56th Street	62,000	48,899	56,791	50,740	69,393	68,051	68,722	68,500	69,000	0.5%
East of 56th Street	54,500	44,551	53,037	46,531	62,121	61,006	61,564	61,500	61,500	0.6%

Table 3.4: Design Year (2045) AADT Calculations – Fowler Avenue Cross Streets

Location	NCHRP Report 765 Ratio & Difference Smoothing Method										
	2022 AADT	TBRPM 2015 AADT	TBRPM 2045 AADT	2022 Interpolated AADT	2045 Smoothed Ratio AADT	2045 Smoothed Difference AADT	2045 Smoothed Average AADT	TAZ Adjusted AGR [1]	Recommended 2045 No-Build AADT (Fowler 8L)	Recommended 2045 Build AADT (Fowler 6L)	AGR
Florida Avenue north of Fowler Avenue	23,500	25,035	37,398	27,920	31,478	32,978	32,228		32,000	32,000	1.6%
Florida Avenue south of Fowler Avenue	23,500	21,434	35,661	24,754	33,855	34,407	34,131		34,000	34,000	1.9%
I-275 SB Off-Ramp north of Fowler Avenue	8,100	3,296	5,443	3,797	11,611	9,746	10,679		9,700	9,400	0.9%
I-275 SB On-Ramp south of Fowler Avenue	18,500	15,764	18,077	16,303	20,512	20,273	20,393		20,500	20,500	0.5%
I-275 NB On-Ramp north of Fowler Avenue	7,000	3,851	6,418	4,450	10,096	8,968	9,532		9,700	9,400	1.7%
I-275 NB Off-Ramp south of Fowler Avenue	16,000	15,375	17,441	15,857	17,598	17,584	17,591		20,500	20,000	1.2%
Nebraska Avenue north of Fowler Avenue	26,500	19,714	33,347	22,895	38,598	36,952	37,775		38,000	39,000	1.9%
Nebraska Avenue south of Fowler Avenue	22,000	21,043	33,663	23,988	30,873	31,675	31,274		31,500	29,500	1.9%
15th Street north of Fowler Avenue	8,400	4,760	7,384	5,372	11,545	10,412	10,978		11,000	10,500	1.3%
15th Street south of Fowler Avenue	8,300	4,305	7,803	5,121	12,646	10,982	11,814		12,000	12,000	1.9%
19th Street north of Fowler Avenue	4,100	4,603	9,100					3.3%	7,200	7,200	3.3%
University Town Center west entrance	2,300	14,829	21,723					1.5%	3,100	3,100	1.5%
University Town Center main entrance	4,700	14,829	21,723					1.5%	6,400	6,400	1.6%
22nd Street south of Fowler Avenue	8,400	5,752	8,256	6,336	10,945	10,320	10,633		10,500	11,000	1.1%
University Town Center east entrance signalized	2,300	14,829	21,723					1.5%	3,100	3,100	1.5%
Club Drive north of Fowler Avenue	3,300	14,829	21,723					1.5%	4,500	4,500	1.6%
University Collections north of Fowler Avenue	6,700	3,603	4,517					0.8%	8,000	7,600	0.8%
BB Downs Boulevard north of Fowler Avenue	45,000	62,818	71,198	50,071	63,987	66,127	65,057		65,000	64,000	1.9%
30th Street south of Fowler Avenue	31,000	28,016	34,555	29,542	36,260	36,013	36,137		36,000	37,000	0.7%
Spectrum Boulevard north of Fowler Avenue	3,100	5,635	12,088	7,141	5,248	8,047	6,647		9,200	9,100	8.6%

Location	NCHRP Report 765 Ratio & Difference Smoothing Method										
	2022 AADT	TBRPM 2015 AADT	TBRPM 2045 AADT	2022 Interpolated AADT	2045 Smoothed Ratio AADT	2045 Smoothed Difference AADT	2045 Smoothed Average AADT	TAZ Adjusted AGR [1]	Recommended 2045 No-Build AADT (Fowler 8L)	Recommended 2045 Build AADT (Fowler 6L)	AGR
McKinley Drive south of Fowler Avenue	20,000	17,694	27,728	20,035	27,679	27,692	27,686		27,500	28,500	1.6%
LeRoy Collins Boulevard north of Fowler Avenue	10,000	27,167	30,433	27,929	10,896	12,504	11,700		20,000	20,000	4.3%
46th Street south of Fowler Avenue	6,200	2,928	4,237	3,233	8,124	7,203	7,664		7,700	7,700	1.1%
USF Bull Run Drive north of Fowler Avenue	4,600	16,296	21,773	17,574	5,699	8,799	7,249		11,000	11,000	6.0%
MOSI driveway south of Fowler Avenue	250	9,055	9,245					0.1%	250	300	0.0%
50th Street north of Fowler Avenue	9,400	4,861	7,733	5,531	13,143	11,602	12,373		12,500	12,000	1.4%
50th Street south of Fowler Avenue	6,200	9,055	9,245					0.1%	6,300	6,900	0.1%
56th Street north of Fowler Avenue	28,500	27,674	37,870	30,053	35,913	36,317	36,115		36,000	36,000	1.1%
56th Street south of Fowler Avenue	31,000	32,494	36,654	33,465	33,954	34,189	34,072		34,000	34,500	0.4%

1. Annual Growth Rate (AGR) for the missing links in the TBRPM was assumed from TAZ or TAZ centroid connectors which ever seems more reasonable and were not subject to NCHRP method.

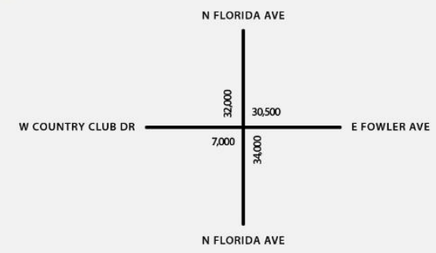
Figure 3.2

Design Year (2045)
No-Build AADT (1)

Legend

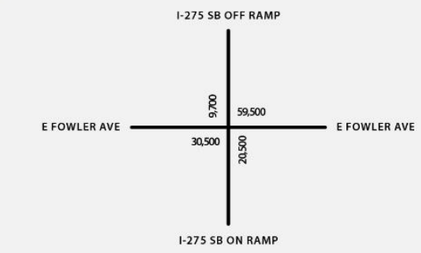
(#) Study Intersection

1 — N Florida Ave at E Fowler Ave



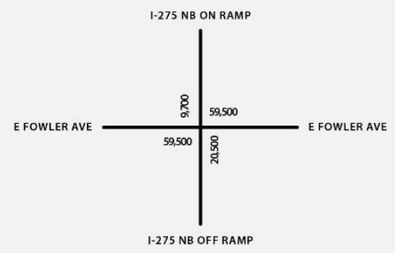
Legend
AADT - X,XXX

2 — E Fowler Ave at I-275 SB On Ramp



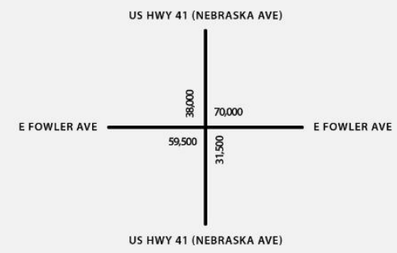
Legend
AADT - X,XXX

3 — E Fowler Ave at I-275 NB Off Ramp



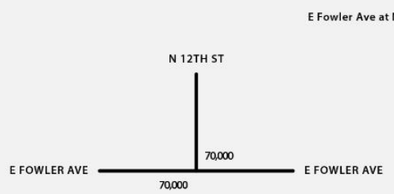
Legend
AADT - X,XXX

4 — E Fowler Ave at US HWY 41 (N Nebraska Ave)



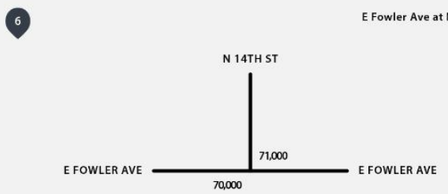
Legend
AADT - X,XXX

5 — E Fowler Ave at N 12th St



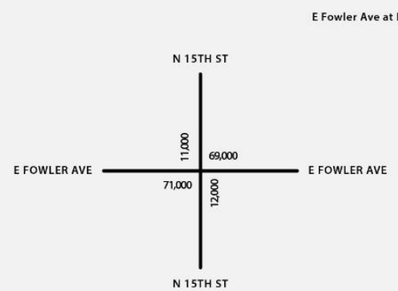
Legend
AADT - X,XXX

6 — E Fowler Ave at N 14th St



Legend
AADT - X,XXX

7 — E Fowler Ave at N 15th St



Legend
AADT - X,XXX

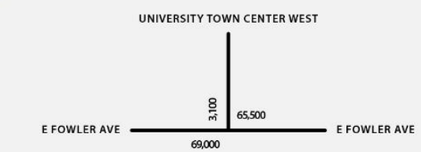
8 — E Fowler Ave at N 17th St

Legend
AADT - X,XXX

9 — E Fowler Ave at N 19th St

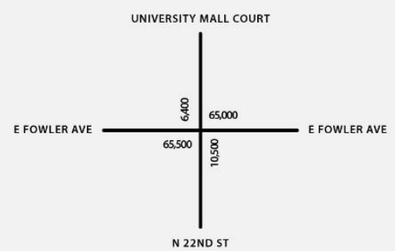
Legend
AADT - X,XXX

10 — E Fowler Ave at University Town Center West



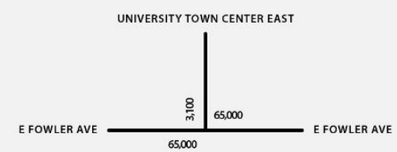
Legend
AADT - X,XXX

11 — E Fowler Ave at N 22nd St



Legend
AADT - X,XXX

12 — E Fowler Ave at University Town Center East



Legend
AADT - X,XXX

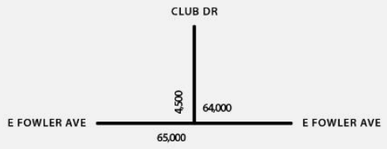
Figure 3.2

Design Year (2045)
No-Build AADT (2)

Legend

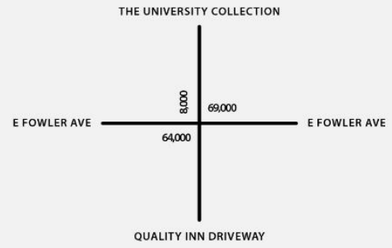
Study Intersection

13 N Florida Ave at Club Dr



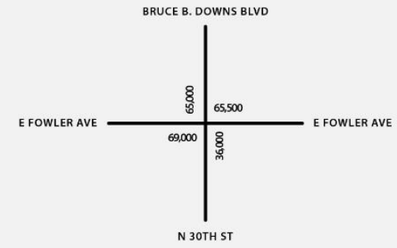
Legend
AADT - X,XXX

14 E Fowler Ave at The University Collection



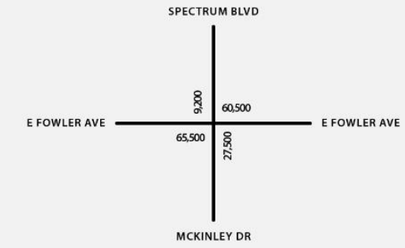
Legend
AADT - X,XXX

15 E Fowler Ave at Bruce B. Downs Blvd



Legend
AADT - X,XXX

16 E Fowler Ave at McKinley Dr



Legend
AADT - X,XXX

17 E Fowler Ave at Leroy Collins Blvd

Legend
AADT - X,XXX

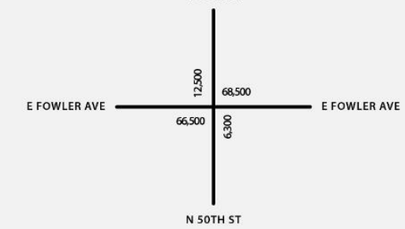
18 E Fowler Ave at N 46th St

Legend
AADT - X,XXX

19 E Fowler Ave at USF Bull Run Dr

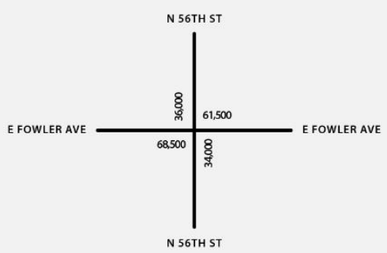
Legend
AADT - X,XXX

20 E Fowler Ave at N 50th St



Legend
AADT - X,XXX

21 E Fowler Ave at N 56th St



Legend
AADT - X,XXX

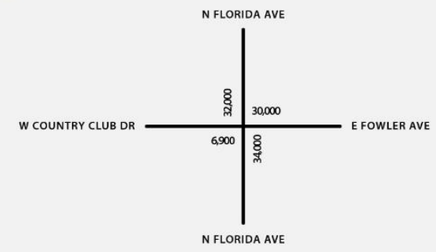
Figure 3.3

Design Year (2045)
Build AADT (1)

Legend

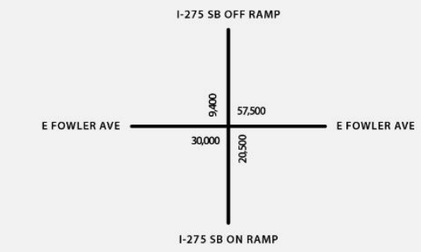
(#) Study Intersection

1 — N Florida Ave at E Fowler Ave



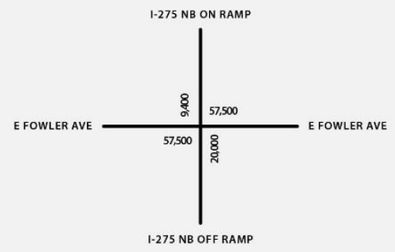
Legend
AADT - X,XXX

2 — E Fowler Ave at I-275 SB On Ramp



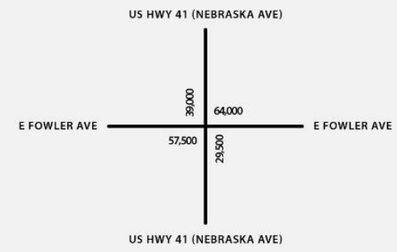
Legend
AADT - X,XXX

3 — E Fowler Ave at I-275 NB Off Ramp



Legend
AADT - X,XXX

4 — E Fowler Ave at US HWY 41 (N Nebraska Ave)



Legend
AADT - X,XXX

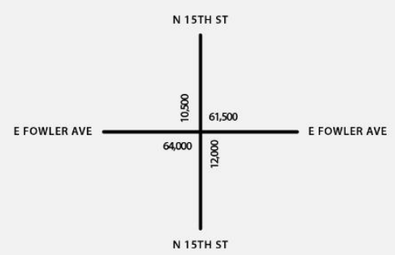
5 — E Fowler Ave at N 12th St

Legend
AADT - X,XXX

6 — E Fowler Ave at N 14th St

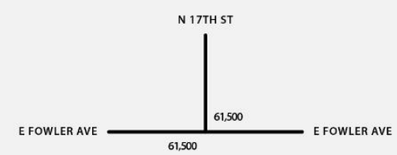
Legend
AADT - X,XXX

7 — E Fowler Ave at N 15th St



Legend
AADT - X,XXX

8 — E Fowler Ave at N 17th St

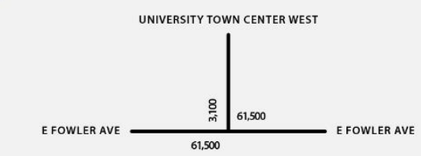


Legend
AADT - X,XXX

9 — E Fowler Ave at N 19th St

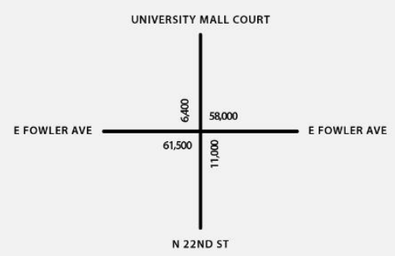
Legend
AADT - X,XXX

10 — E Fowler Ave at University Town Center West



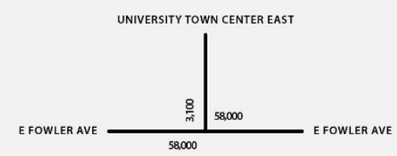
Legend
AADT - X,XXX

11 — E Fowler Ave at N 22nd St



Legend
AADT - X,XXX

12 — E Fowler Ave at University Town Center East



Legend
AADT - X,XXX

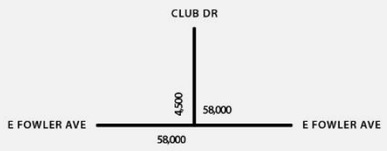
Figure 3.3

Design Year (2045)
Build AADT (2)

Legend

Study Intersection

13 N Florida Ave at Club Dr

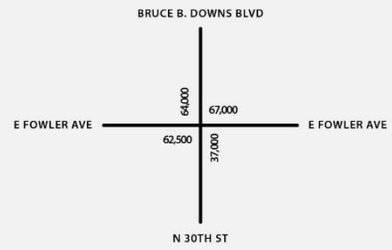


Legend
AADT - X,XXX

14 E Fowler Ave at The University Collection

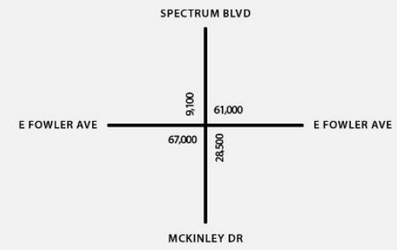
Legend
AADT - X,XXX

15 E Fowler Ave at Bruce B. Downs Blvd



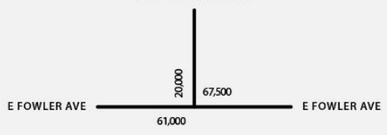
Legend
AADT - X,XXX

16 E Fowler Ave at McKinley Dr



Legend
AADT - X,XXX

17 E Fowler Ave at Leroy Collins Blvd



Legend
AADT - X,XXX

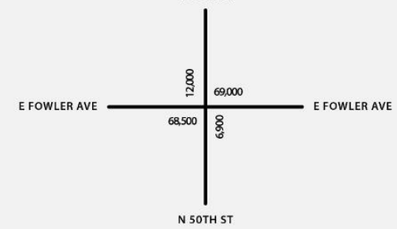
18 E Fowler Ave at N 46th St

Legend
AADT - X,XXX

19 E Fowler Ave at USF Bull Run Dr

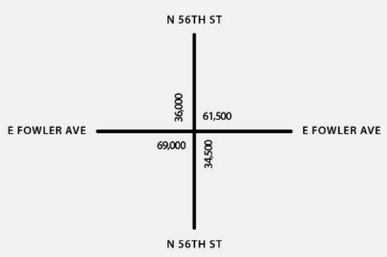
Legend
AADT - X,XXX

20 E Fowler Ave at N 50th St



Legend
AADT - X,XXX

21 E Fowler Ave at N 56th St



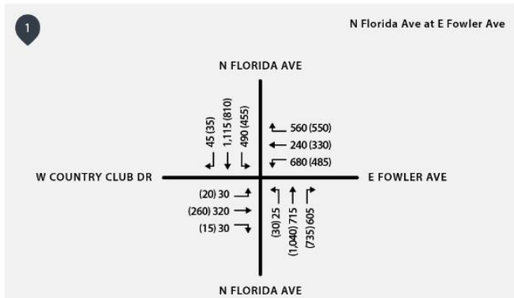
Legend
AADT - X,XXX

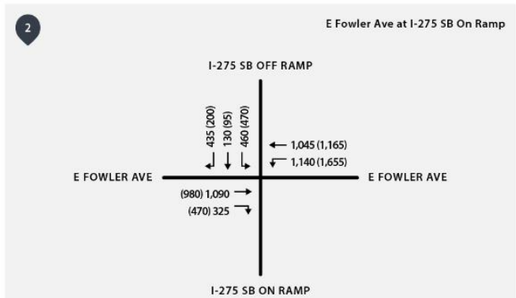
Figure 3.4

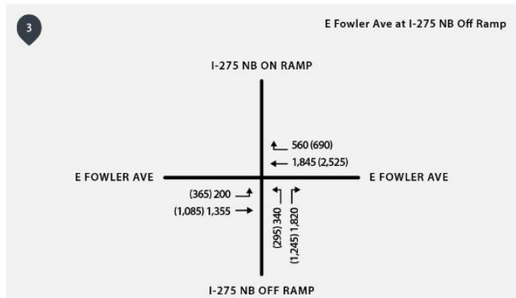
Design Year (2045) No-Build Turning Movement Volumes (1)

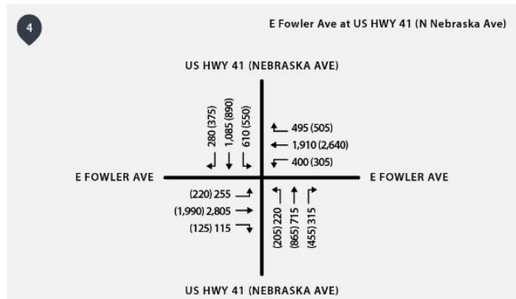
Legend

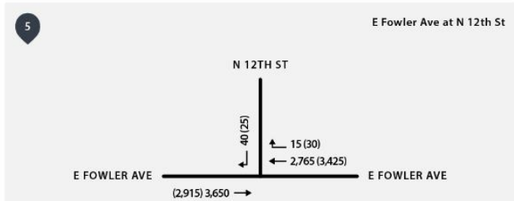
Study Intersection

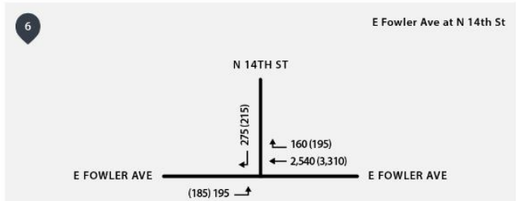


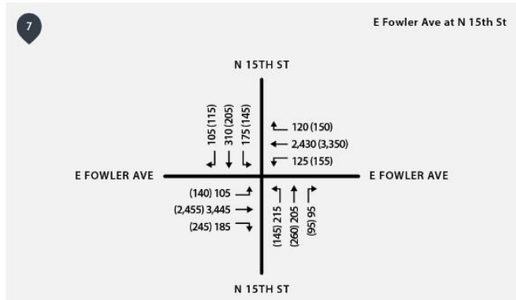


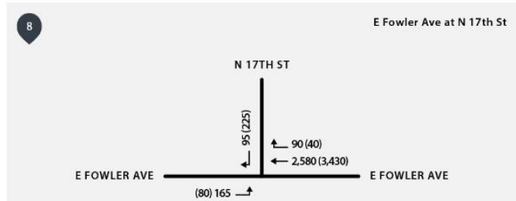


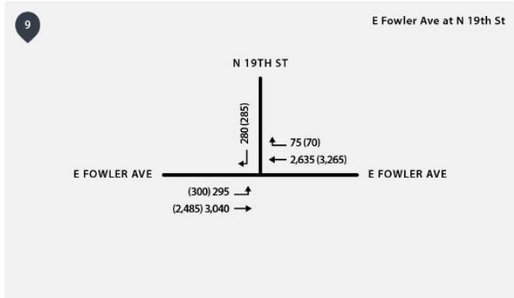


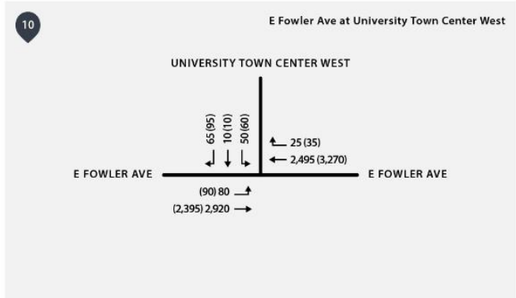


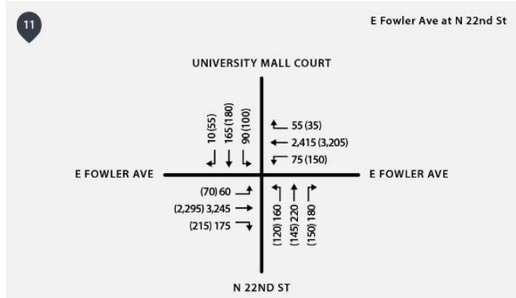












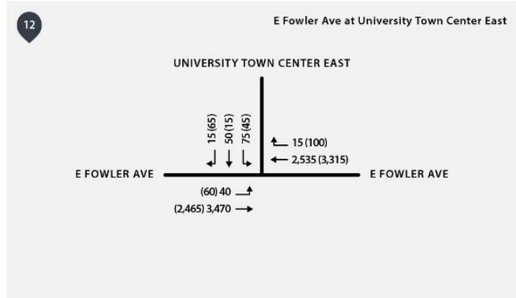
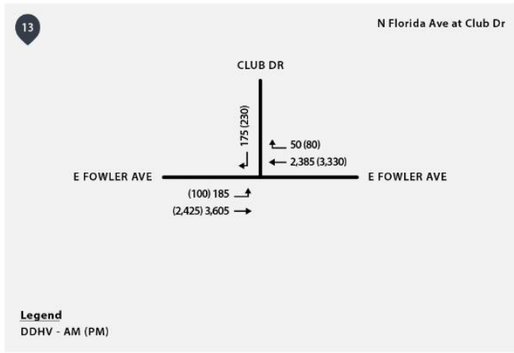


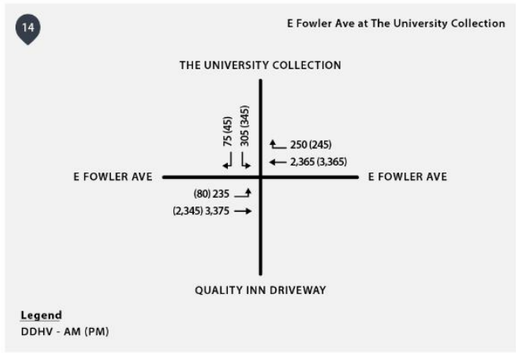
Figure 3.4

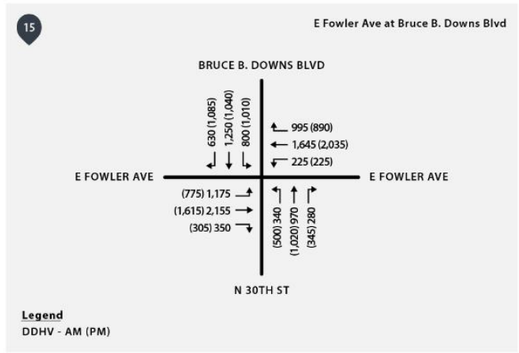
Design Year (2045) No-Build Turning Movement Volumes (2)

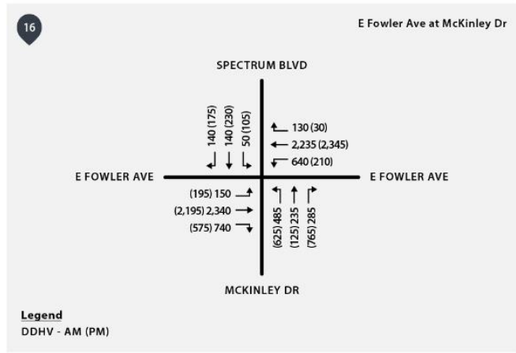
Legend

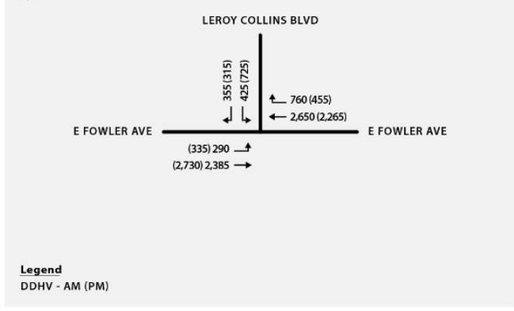
Study Intersection

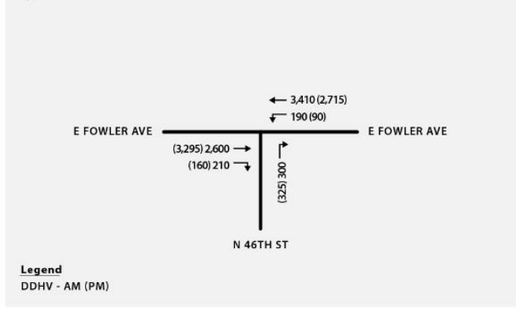


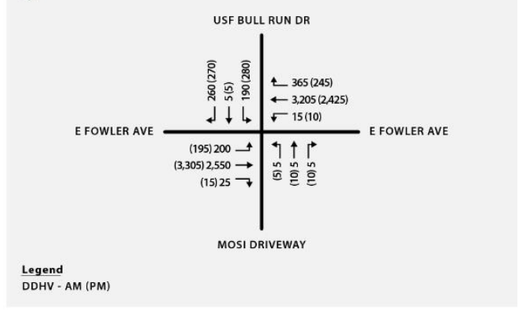


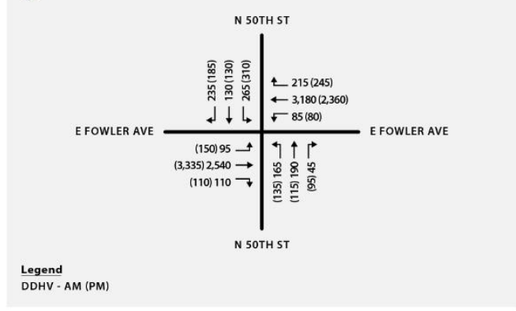












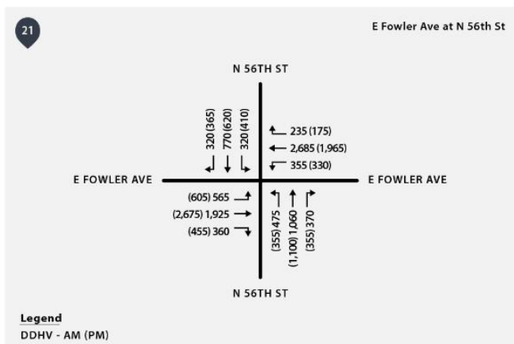


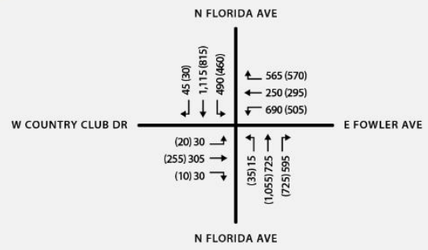
Figure 3.5

Design Year (2045) Build Turning Movement Volumes (1)

Legend

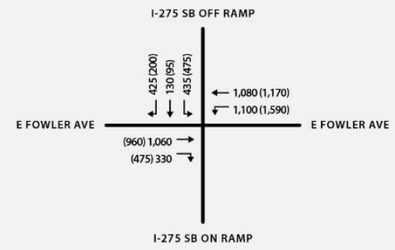
Study Intersection

1 — N Florida Ave at E Fowler Ave



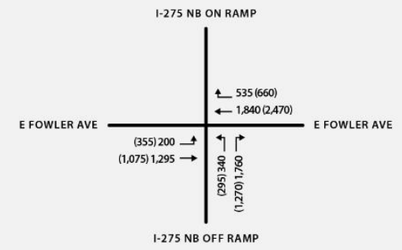
Legend
DDHV - AM (PM)

2 — E Fowler Ave at I-275 SB On Ramp



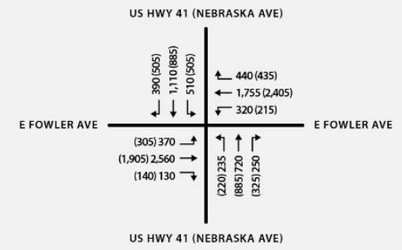
Legend
DDHV - AM (PM)

3 — E Fowler Ave at I-275 NB Off Ramp



Legend
DDHV - AM (PM)

4 — E Fowler Ave at US HWY 41 (N Nebraska Ave)



Legend
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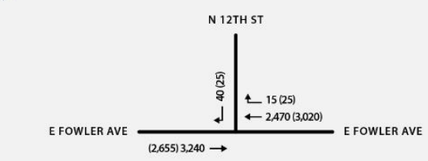
5 — E Fowler Ave at N 12th St

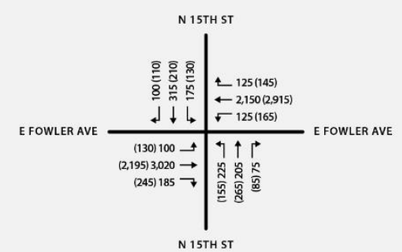


Legend
DDHV - AM (PM)

6 — E Fowler Ave at N 14th St

Legend
DDHV - AM (PM)

7 — E Fowler Ave at N 15th St



Legend
DDHV - AM (PM)

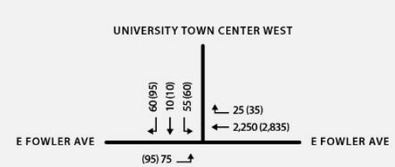
8 — E Fowler Ave at N 17th St

Legend
DDHV - AM (PM)

9 — E Fowler Ave at N 19th St

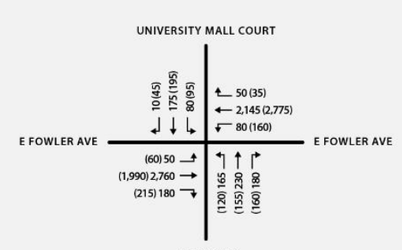
Legend
DDHV - AM (PM)

10 — E Fowler Ave at University Town Center West



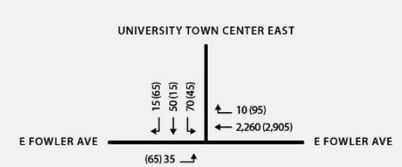
Legend
DDHV - AM (PM)

11 — E Fowler Ave at N 22nd St



Legend
DDHV - AM (PM)

12 — E Fowler Ave at University Town Center East



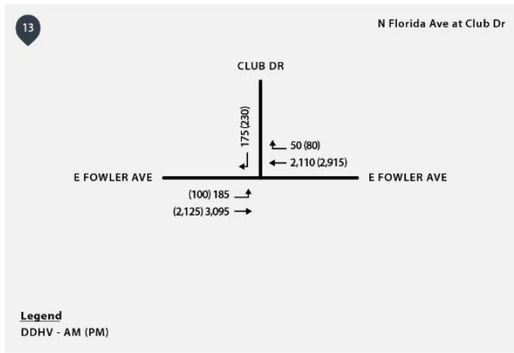
Legend
DDHV - AM (PM)

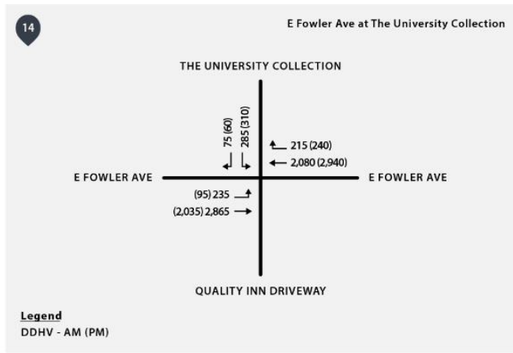
Figure 3.5

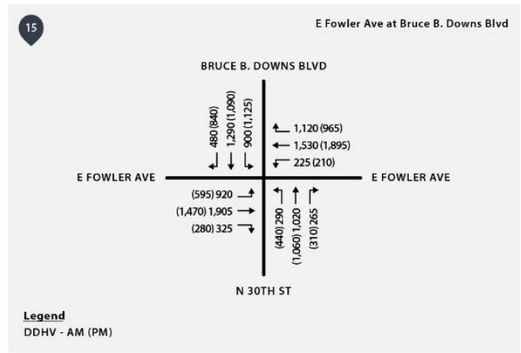
Design Year (2045) Build Turning Movement Volumes (2)

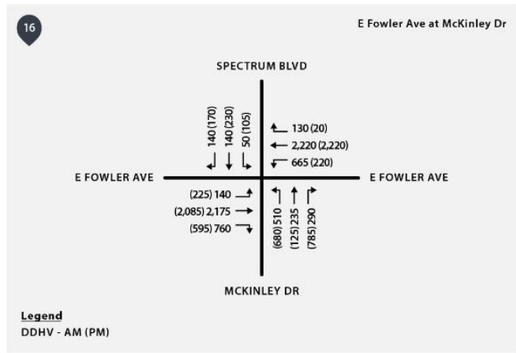
Legend

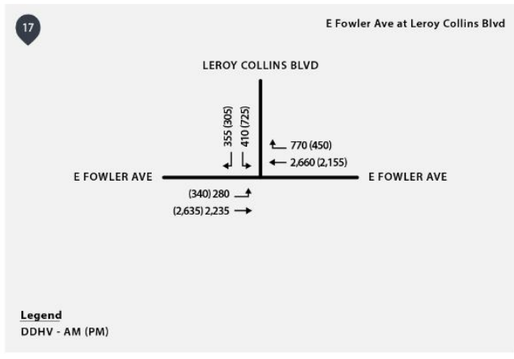
Study Intersection

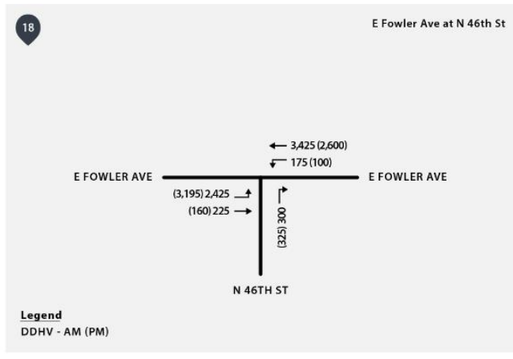


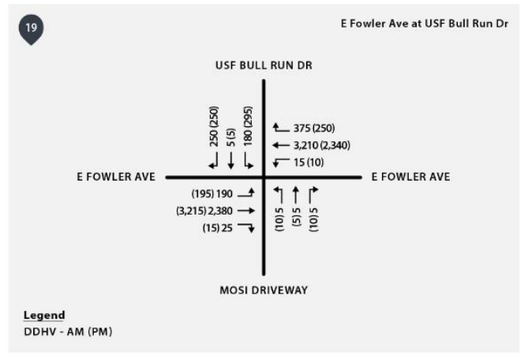


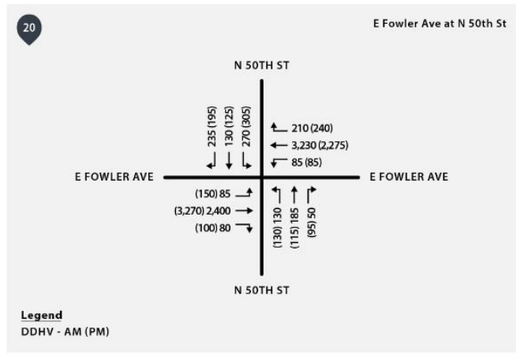


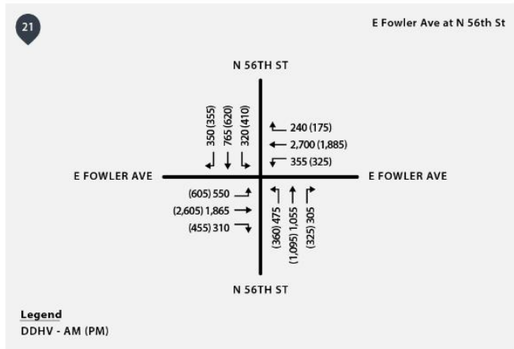












4.0 Alternatives Development

4.1 No-Build Alternative

Throughout this PD&E study, the No-Build Alternative has been considered and analyzed. The No-Build Alternative consists of maintaining the existing Fowler Avenue through lanes and turn lanes, and the cross street thru/turn lanes. No further improvements are added (i.e., "Built") to the corridor as part of this alternative. **Figure 4.1**, **Figure 4.2**, and **Figure 4.3** shows the three existing No-Build typical sections for Fowler Avenue from Florida Avenue to 56th Street, from west to east respectively.

Figure 4.1: Fowler Avenue Existing Typical Section, from North Florida Avenue to Nebraska Avenue

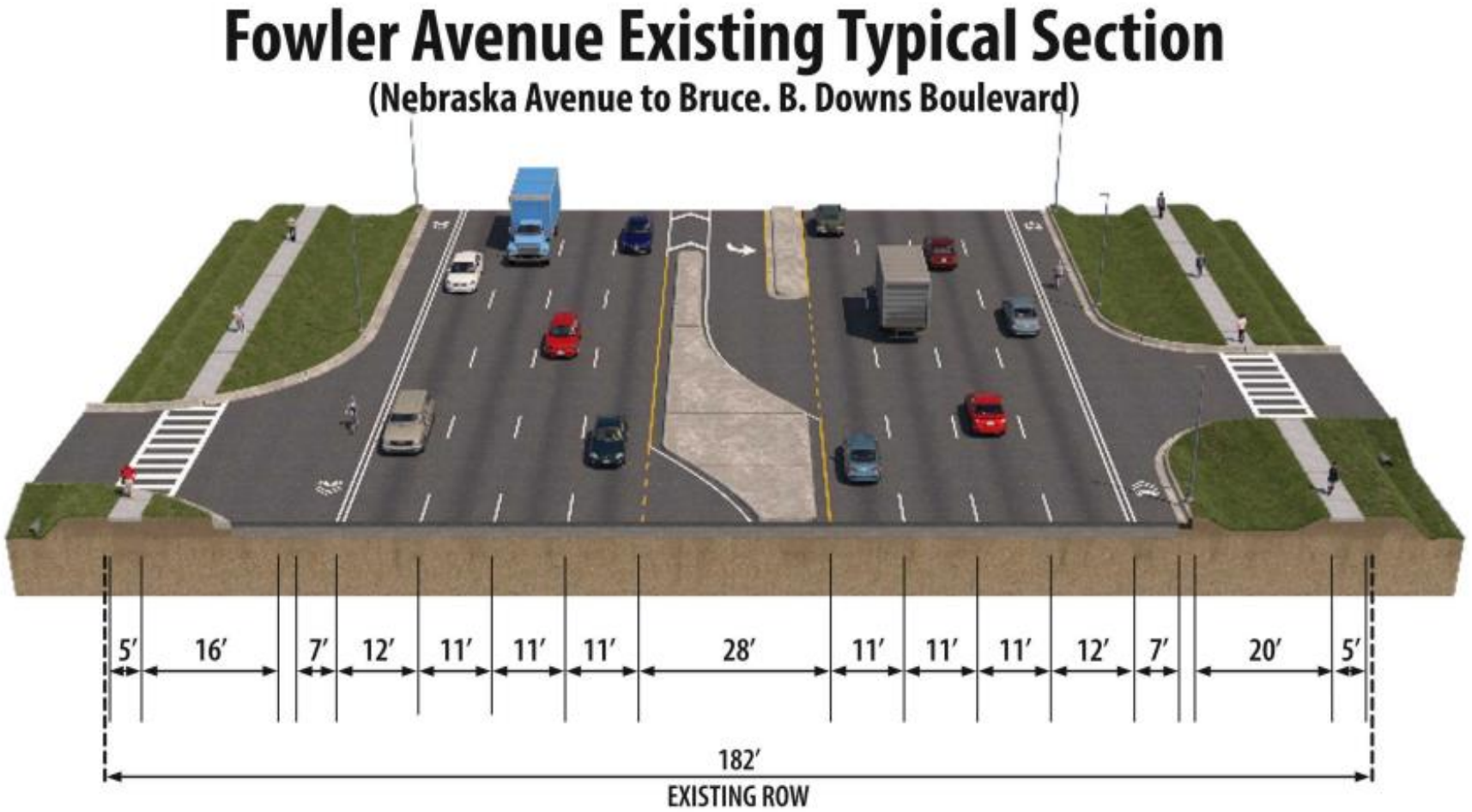


Figure 4.2: Fowler Avenue Existing Typical Section, from Nebraska Avenue to Bruce B Downs Boulevard

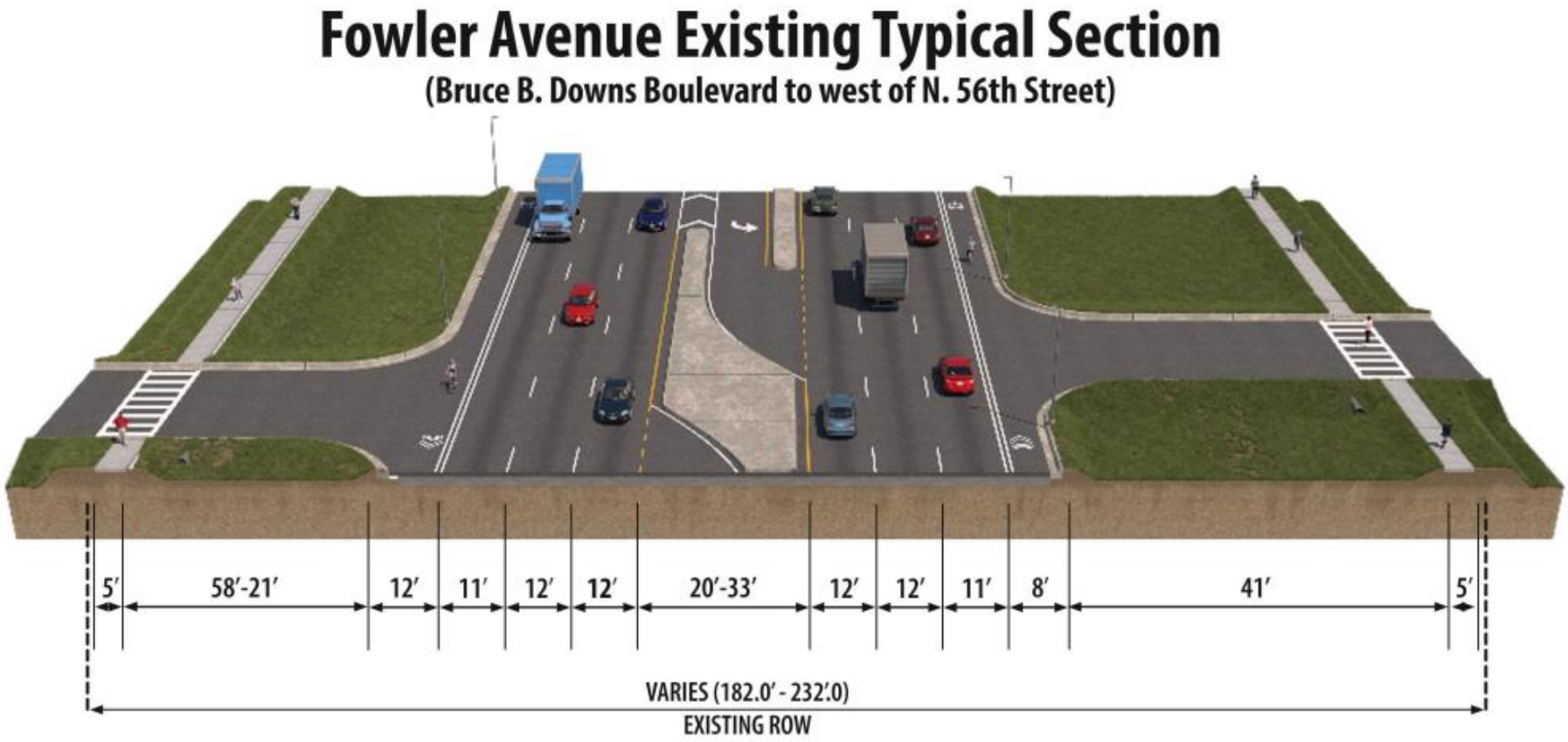


Figure 4.3: Fowler Avenue Existing Typical Section, from Bruce B Downs Boulevard to North 56th Street

4.2 Build Alternatives

Three alternatives were developed to test their effectiveness for users along Fowler Avenue, in the segment from Nebraska Avenue to Bruce B Downs Boulevard. The segment west of Nebraska Avenue to Florida Avenue, and the segment east of Bruce B Downs Boulevard to 56th Street were not part of the Build Alternative areas. The Nebraska Avenue -to-Bruce B Downs Boulevard segment was focused on because of the dense commercial and adjacent residential uses within this area.

Common to all the three Build Alternatives are improvements to enhance safety for vulnerable users (pedestrians and bicyclists) along this Fowler Avenue segment. These improvements include the addition of mid-block pedestrian crossings at strategic locations, and a shared use path along Fowler Avenue for pedestrians and bicycles. The shared use path would extend from Nebraska Avenue to east of 56th Street. The concepts for each Build Alternative are included in Appendix G.

4.2.1 Business Access and Transit (BAT) Lane Alternative

The Business Access and Transit (BAT) Lane Alternative repurposes the existing outside "general purpose" (i.e., any vehicle can use this lane) through lane to a lane to be exclusively used by transit system buses and vehicles turning into driveways and cross streets adjacent to Fowler Avenue from Nebraska Avenue to Bruce B Downs Boulevard. The BAT Lane provides more efficient movement for transit vehicles through traffic and provides a lane specifically to access adjacent businesses. This alternative can be constructed within the existing Fowler Avenue right-of-way**. Figure 4.4** shows the BAT Lane Alternative for the Nebraska Avenue to Bruce B Downs Boulevard segment.

4.2.2 Median Guideway Alternative

The Median Guideway Alternative provides for exclusive bus transit movements in the median of Fowler Avenue. **Figure 4.5** shows how the Median Guideway is configured. The alternative allows buses in opposite directions to use the corridor simultaneously. Transit users would have access to the guideway via pedestrian crosswalks. Given the dedicated lanes, transit vehicles would have efficient movements along Fowler Avenue in this segment. This alternative can be constructed within the existing Fowler Avenue right-of-way.

4.2.3 Frontage Road Alternative

The Frontage Road Alternative attempts to provide better access to the driveways along Fowler Avenue for the large amount of turning vehicles headed to/from businesses and apartments along Fowler Avenue. By separating the turning vehicles on the outside of the road, the through vehicles on Fowler Avenue are less impeded by the vehicles entering and exiting the driveways and side streets. Moreover, the alternative provides for a bus lane adjacent to the frontage road divider. Right-of -way acquisition would be required to accommodate this alternative. **Figure 4.6** shows the Frontage Road Alternative.

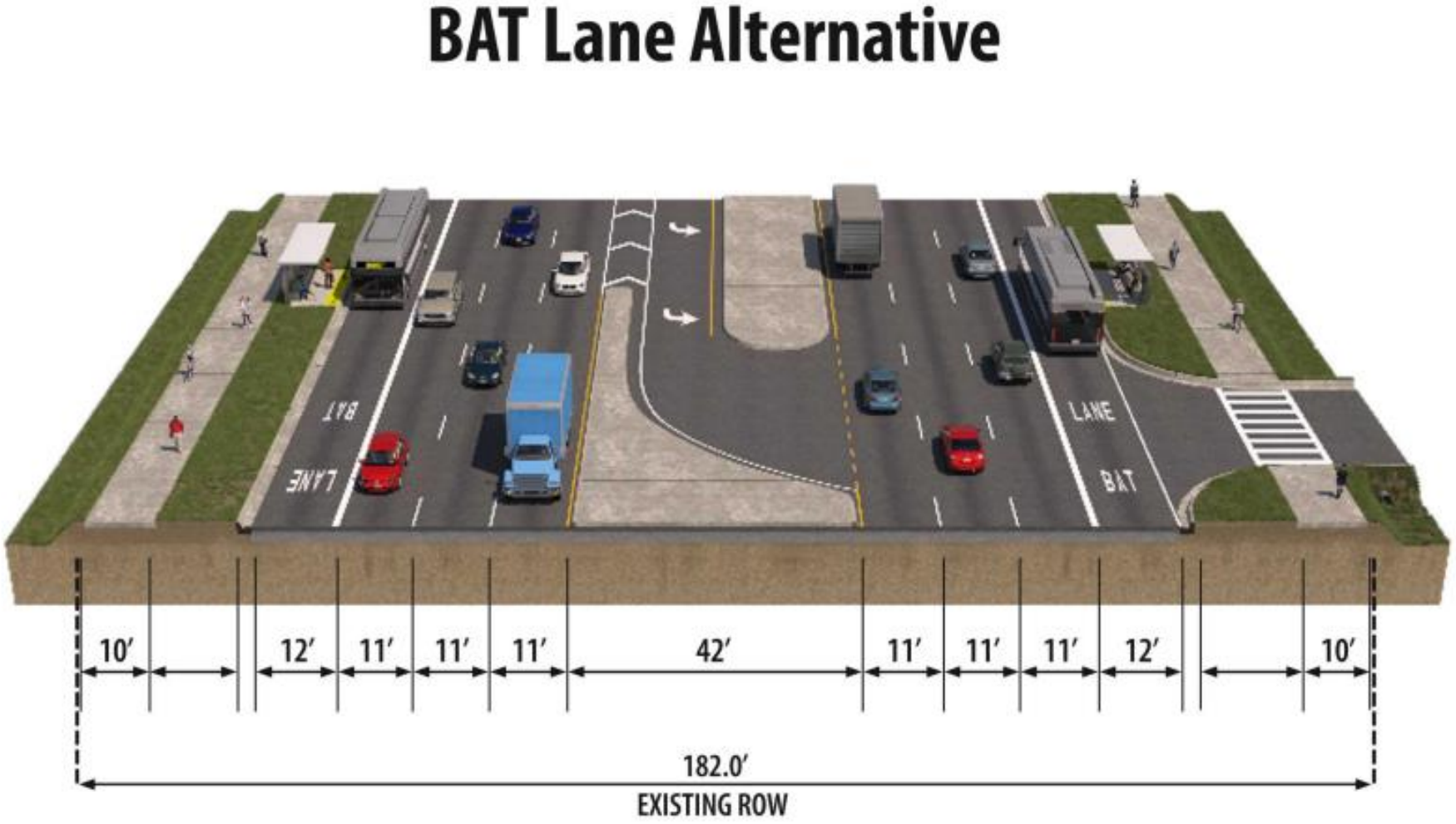


Figure 4.4: Fowler Avenue BAT Lane Alternative Typical Section

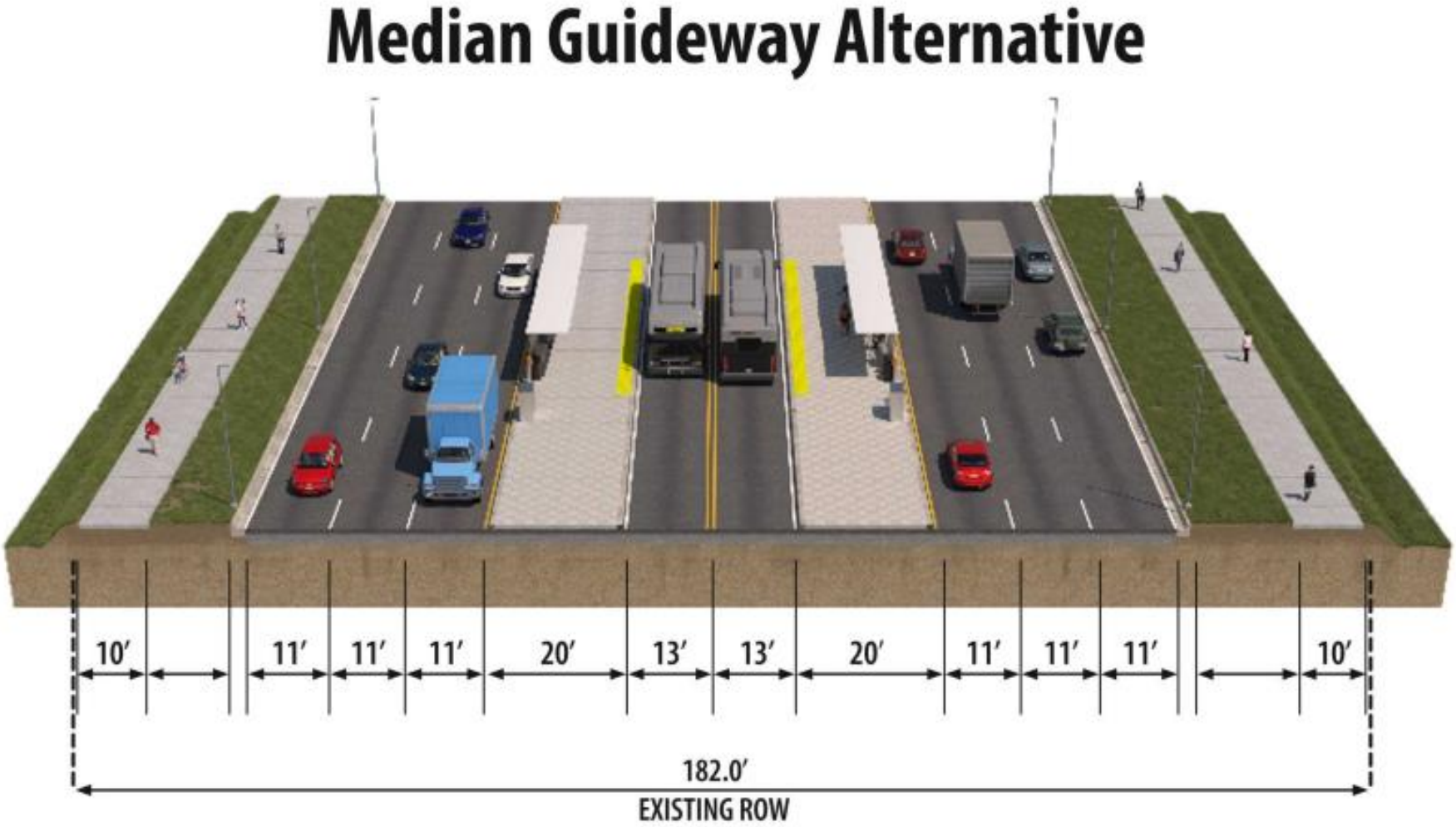


Figure 4.5: Fowler Avenue Median Guideway Alternative Typical Section

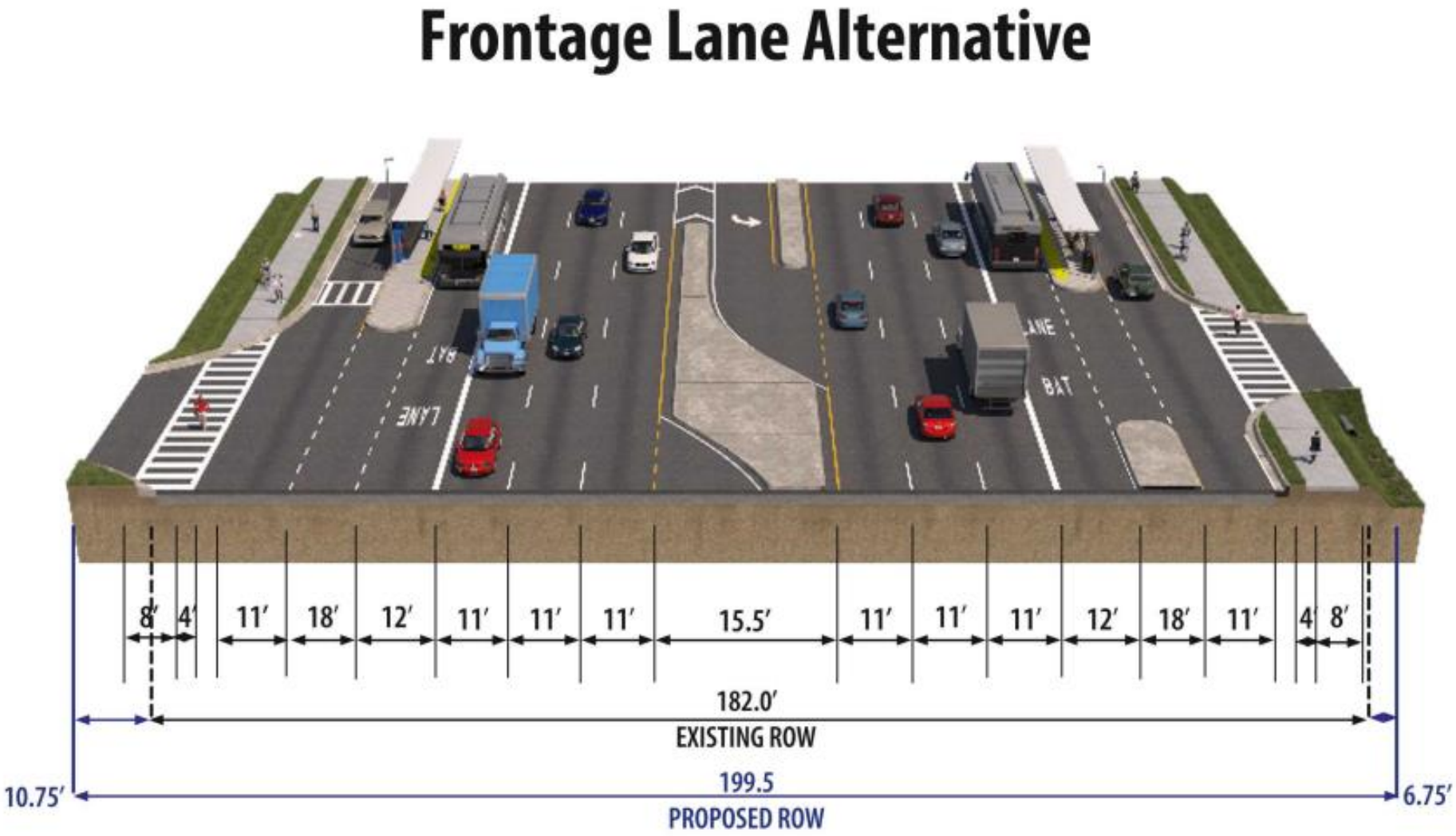


Figure 4.6: Fowler Avenue Frontage Lane Alternative Typical Section

5.0 Future Conditions Traffic Analysis

An operational analysis was conducted for the study area for the Design (2045) Year AM and PM peak periods. Traffic analysis at intersections were performed according to the methodologies contained in the *Highway Capacity Manual (HCM), 6th Edition* and *HCM, 2000 Edition* using Synchro Version 11 for the No-Build, Business Access and Transit (BAT) Lane, Median Guideway, and Frontage Road Alternatives. *HCM 2000* results were used where limitations of the *HCM, 6th Edition* prevented results.

To compare the most effective alternative for signalized intersections, an intersection-by-intersection comparison of delay times for the No-Build and Build alternatives was performed for both the AM and PM periods, as seen in **Table 5.1** below. **Table 5.2** shows the intersection-by-intersection comparison of delay times for the No-Build and Build alternatives for intersections west of Nebraska Avenue and East of Bruce B Downs Boulevard. For comparison purposes for each Build alternative, the cycle lengths are held consistent, and the green splits are optimized. Synchro outputs can be found in **Appendix H**.

5.1 No-Build Alternative

The No-Build Alternative conditions assume no improvements to the network or signal timings.

- Calculated delay times indicate that most intersections are projected to operate at a LOS F in both the AM and PM peak hours. The side street delay times are, in general, greater than the Fowler Avenue mainline.

5.2 Business Access and Transit Lane Alternative

The BAT Lane Alternative assumes operational changes with the implementation of the BAT lane between Nebraska Avenue and Bruce B Downs Boulevard. Calculated delay times show that most intersections are projected to operate at a LOS E and LOS F in this scenario in both the AM and PM peak hours. Some if the eastbound and westbound approaches of Fowler Avenue within the transit segment of the study area for the BAT Lane alternative have increased delays due to the conversion of the outside general purpose through lane to a shared BAT lane.

5.3 Median Guideway Alternative

The Median Guideway Alternative assumes operational changes and new signalized intersections with the implementation of the Median Guideway between Nebraska Avenue and Bruce B Downs Boulevard.

- In general, calculated delay times demonstrate that intersections within the Median Guideway section are expected to operate with more overall delay as compared to the No-Build and BAT

Alternatives. Nebraska Avenue and Bruce B Downs Boulevard operate at a LOS E and LOS F during both the AM and PM peak hours.

5.4 Frontage Road

Similar to the BAT Lane Alternative, the Frontage Road Alternative assumes operational changes with the implementation of a Frontage Road between Nebraska Avenue and Bruce B Downs Boulevard. Similar to the No-Build Alternative and BAT Alternative, calculated delay times show that most intersections are projected to operate at a LOS E and LOS F in this scenario in both the AM and PM peak hours. In addition, left-turns at the unsignalized median openings are restricted and those left-turns are reassigned as U-turns at the downstream signalized intersections. In general, while this improves operations at the unsignalized intersections, it slightly increases delay at the signalized intersections.

5.5 Alternatives Comparison

For the No-Build and Build Alternatives, there are significant differences in the number of intersections analyzed and their overall control type. Therefore, general network results were run to gain internal understanding of the overall network measures of effectiveness for the segment of the study area between Nebraska Avenue and Bruce B Downs Boulevard. The network results for this segment are provided for the AM and PM periods in **Table 5.3** and **Table 5.4**, respectively.

Based on the network total delay comparison, between Nebraska Avenue and Bruce B Downs Boulevard, the BAT Lane Alternative performs the best, followed by the No-Build Alternative , Frontage Road Alternative, then Median Guideway Alternative for the AM peak period. During the PM peak period the BAT Lane Alternative performs the best, followed by the No-Build Alternative, Frontage Road Alternative, then Median Guideway Alternative.

Table 5.1: Signalized Intersection-by-Intersection Delay Comparison

Intersection	AM				PM			
	No-Build 2045 (s/v)	BAT 2045 (s/v)	Median Guideway 2045 (s/v)	Frontage Road 2045 (s/v)	No-Build 2045 (s/v)	BAT 2045 (s/v)	Median Guideway 2045 (s/v)	Frontage Road 2045 (s/v)
Nebraska Avenue & Fowler Avenue	135.8	126.9	119.4	113.8	94.5	97.8	90.1	101.6
14th Street & Fowler Avenue	-	-	52.2	-	-	-	16.2	-
15th Street & Fowler Avenue	132.4	102.2	121.1	127.7	96.9	102.0	75.8	102.4
17th Street & Fowler Avenue	-	-	17.1	-	-	-	21.8	-
Shopping Plaza/N 19th Street & Fowler Avenue	-	-	-	31.0	-	-	-	44.8
University Mall West & Fowler Avenue	-	-	51.2	-	-	-	55.0	-
22nd Street/University Mall & Fowler Avenue	24.1	111.3	137.4	42.5	40.2	77.9	79.1	49.3
University Mall East & Fowler Avenue	-	-	14.3	-	-	-	20.3	-
Quality Inn Entrance/University Collection & Fowler Avenue	17.3	14.6	9.9	65.1	6.8	8.4	7.0	61.9
30th Street/Bruce B Downs Boulevard & Fowler Avenue	190.2	172.4	257.3	171.9	197.0	160.1	201.2	159.9

Table 5.2: Signalized Intersection-by-Intersection Delay Comparison (Outside Transit Segment)

Intersection	AM				PM			
	No-Build 2045 (s/v)	BAT 2045 (s/v)	Median Guideway 2045 (s/v)	Frontage Road 2045 (s/v)	No-Build 2045 (s/v)	BAT 2045 (s/v)	Median Guideway 2045 (s/v)	Frontage Road 2045 (s/v)
Florida Avenue & Country Club Drive/Fowler Avenue	145.3	139.4	139.4	139.4	112.4	92.1	92.1	92.1
I-275 SB On Ramp/I-275 SB Off Ramp & Fowler Avenue	154.4	95.7	95.7	95.7	111.2	118.8	118.6	118.6
I-275 NB On Ramp/I-275 NB Off Ramp & Fowler Avenue	133.3	111.5	112.0	111.7	102.2	126.4	126.4	125.3
McKinley Drive/Spectrum Boulevard & Fowler Avenue	124.3	74.5	74.5	74.5	89.8	89.4	89.4	89.4
Fowler Avenue & Leroy Collins Boulevard	32.9	28.4	28.4	28.4	39.0	35.0	35.3	35.3
MOSI Entrance/Bull Run Drive & Fowler Avenue	52.8	29.2	29.2	29.2	45.3	28.9	28.9	28.9
50th Street & Fowler Avenue	69.8	23.5	23.5	23.5	62.2	47.1	47.1	47.1
56th Street & Fowler Avenue	178.5	131.4	131.4	131.4	122.2	120.2	120.2	120.2

Table 5.3: Alternative Overall Delay Comparison AM

Delay Type	Existing (2022)	No Build (2045)	BAT (2045)	Median Guideway (2045)	Frontage Road (2045)
Control Delay (s/v)	28	52	48	71	59
Queue Delay (s/v)	0	0	0	10	0
Total Delay (s/v)	29	52	48	81	59
Total Delay (hr)	556	1277	1070	1897	1255
Total Travel Time (hr)	845	1642	1422	2266	1604

Table 5.4: Alternative Overall Delay Comparison PM

Delay Type	Existing (2022)	No Build (2045)	BAT (2045)	Median Guideway (2045)	Frontage Road (2045)
Control Delay (s/v)	24	44	40	57	55
Queue Delay (s/v)	0	0	2	10	1
Total Delay (s/v)	24	44	42	67	56
Total Delay (hr)	448	1062	901	1504	1144
Total Travel Time (hr)	734	1426	1243	1858	1488

Appendices

Appendix A

Traffic Methodology Statement

Traffic Methodology Statement *(Draft)*

Project Development and Environment
(PD&E) Study

Hillsborough County, Florida
SR 582/Fowler Avenue from N. Florida Avenue to N. 56th Street/SR 583

Financial Project ID: 448505-1-22-01

Prepared For:
Florida Department of Transportation, District 7
11201 McKinley Drive, Tampa, FL 33612

July, 2022

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1.0 Methodology Statement Purpose

The purpose of this Statement is to summarize the process that will be employed to collect traffic data, develop traffic forecasts, and perform operational and safety analyses for the existing corridor to analyze transit corridor alternatives, multi-modal improvements, roadway configuration, and bicycle and pedestrian improvements for SR 582/Fowler Avenue, from North Florida Avenue to North 56th Street, Project Development and Environment (PD&E) Study.

2.0 Existing Analysis

2.1 Study Area

The project study area extends along Fowler Avenue from N Florida Avenue to N 56th Street as shown in **Figure 2.1** and includes the following study intersections:

Signalized Intersections:

- Fowler Avenue at N. Florida Avenue
- Fowler Avenue at I-275 SB Ramps
- Fowler Avenue at I-275 NB Ramps
- Fowler Avenue at Nebraska Avenue
- Fowler Avenue at N. 15th Street
- Fowler Avenue at N 22nd Street
- Fowler Avenue at University Collection Drive
- Fowler Avenue at Bruce B Downs Blvd
- Fowler Avenue at McKinley Drive/Spectrum Blvd
- Fowler Avenue at Leroy Collins Blvd
- Fowler Avenue at Bull Run Drive
- Fowler Avenue at N 50th Street
- Fowler Avenue at N 56th Street

Unsignalized Intersections:

- Fowler Avenue at 19th Street
- Fowler Avenue at University Town Center west entrance
- Fowler Avenue at University Town Center east entrance
- Fowler Avenue at Club Drive

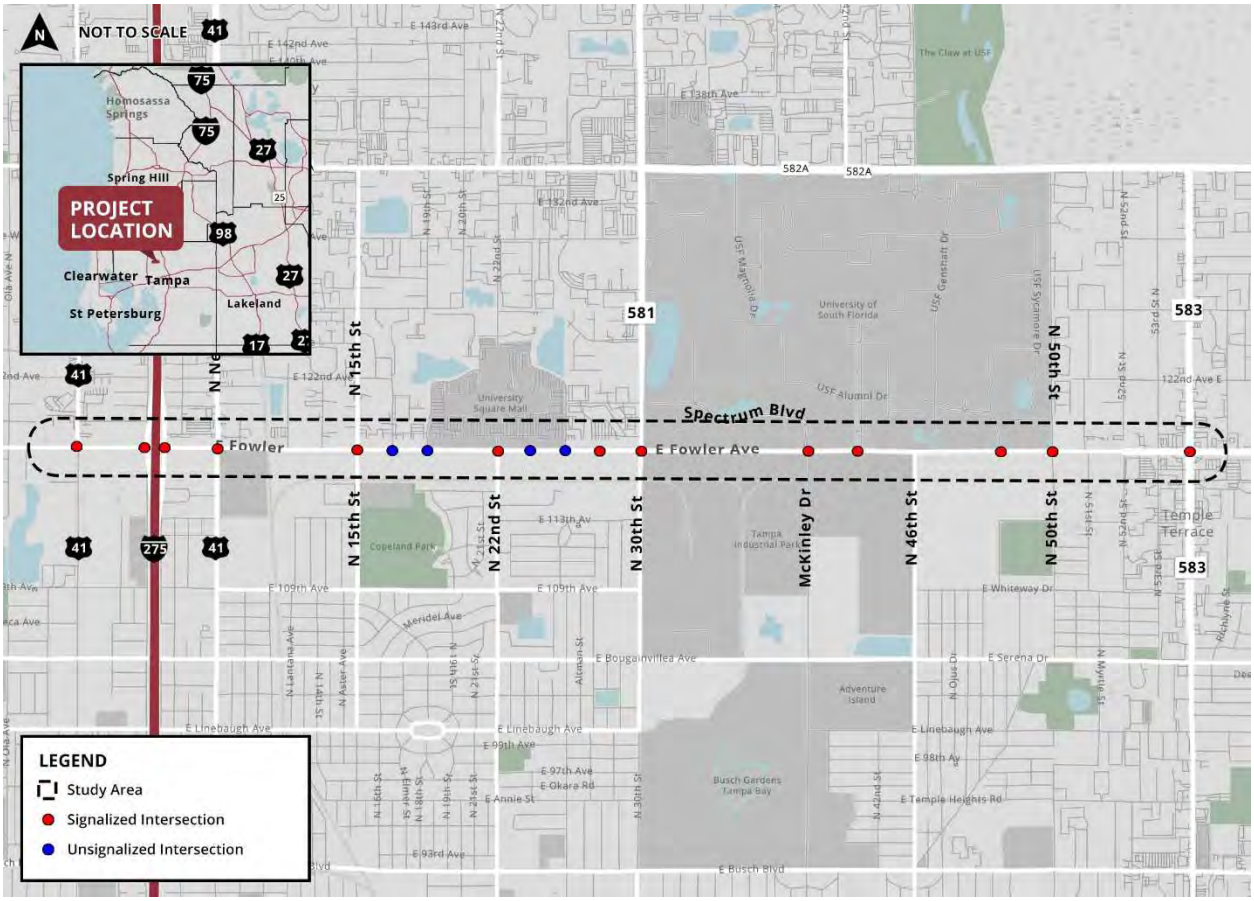


Figure 2.1: Project Location Map

2.2 Traffic Data Collection

As part of the existing Corridor Study, 72-hour bi-directional (approach and departure volumes at 15-minute increments) machine classification counts, 72-hour bi-directional (approach and departure volumes at 15-minute increments) approach counts, 2-hour AM (from 7:00 AM to 9:00 AM), and 2-hour PM (from 4:00 PM to 6:00 PM) turning movement, pedestrian, and bicycle counts were collected the week of April 25th, 2022. These counts are summarized below and are illustrated in **Appendix A**. Travel Time Data was verified utilizing INRIX vehicle probe data and observed speeds at approach count locations.

72-hour Bi-Directional Intersection Approach Count Locations

- University Town Center west entrance (unsignalized)
- University Town Center main entrance (signalized)
- University Town Center east entrance (unsignalized)
- University Collections main entrance north of Fowler Avenue

72-hour Vehicle Classification Count Locations

- W. Country Club Drive west of Florida Avenue
- Florida Avenue north of Fowler Avenue

- Fowler Avenue between Florida Avenue and SB I-275 Ramps
- Florida Avenue south of Fowler Avenue
- I-275 SB Off-Ramp north of Fowler Avenue
- I-275 SB On-Ramp south of Fowler Avenue
- I-275 NB On-Ramp north of Fowler Avenue
- I-275 NB Off-Ramp south of Fowler Avenue
- Fowler Avenue between I-275 NB Ramps and Nebraska Avenue
- Nebraska Avenue north of Fowler Avenue
- Fowler Avenue east of Nebraska Avenue
- Nebraska Avenue south of Fowler Avenue
- Fowler Avenue west of 15th Street
- 15th Street north of Fowler Avenue
- Fowler Avenue east of 15th Street
- 15th Street south of Fowler Avenue
- 19th Street north of Fowler Avenue
- Fowler Avenue west of 22nd Street
- Fowler Avenue east of 22nd Street
- 22nd Street south of Fowler Avenue
- Club Drive north of Fowler Avenue
- Fowler Avenue west of University Collections main entrance
- Fowler Avenue west of Bruce B. Downs Boulevard
- Quality Inn driveway south of Fowler Avenue (Data not collected due to construction fence)
- Bruce B Downs Boulevard north of Fowler Avenue
- Fowler Avenue east of Bruce B. Downs Boulevard
- 30th Street south of Fowler Avenue
- Spectrum Boulevard north of Fowler Avenue
- Fowler Avenue east of Spectrum Boulevard/McKinley Drive
- McKinley Drive south of Fowler Avenue
- LeRoy Collins Boulevard north of Fowler Avenue
- Fowler Avenue between LeRoy Collins Boulevard and 46th Street
- Fowler Avenue east of 46th Street
- 46th Street south of Fowler Avenue
- USF Bull Run Drive north of Fowler Avenue
- Fowler Avenue between USF Bull Run Drive/MOSI driveway and 50th Street
- MOSI driveway south of Fowler Avenue
- 50th Street north of Fowler Avenue
- Fowler Avenue east of 50th Street
- 50th Street south of Fowler Avenue
- Fowler Avenue west of 56th Street
- 56th Street north of Fowler Avenue
- Fowler Avenue east of 56th Street
- 56th Street south of Fowler Avenue

4-hour Turning Movement Count Locations

- Fowler Avenue at Florida Avenue
- Fowler Avenue at SB I-275 Ramps
- Fowler Avenue at NB I-275 Ramps
- Fowler Avenue at Nebraska Avenue
- Bi-directional median opening at 12th Street (EB/WB only)
- Bi-directional median opening at 14th Street (EB/WB only)
- Fowler Avenue at 15th Street
- Bi-directional median opening at 17th Street (EB/WB only)
- Fowler Avenue at 19th Street (unsignalized)
- Fowler Avenue at University Town Center west entrance (unsignalized)
- Fowler Avenue at 22nd Street
- Fowler Avenue at University Town Center east entrance (unsignalized)
- Fowler Avenue at Club Drive (unsignalized)
- Fowler Avenue at University Collections main entrance/Quality Inn driveway
- Fowler Avenue at Bruce B. Downs Boulevard
- Fowler Avenue at Spectrum Boulevard/McKinley Drive
- Fowler Avenue at Lee Roy Collins Boulevard
- Fowler Avenue at USF Bull Run Drive/MOSI driveway
- Fowler Avenue at 50th Street
- Fowler Avenue at 56th Street

2.3 Design Traffic Factors

Design Traffic Factor development is outlined in this section. All developed Design Traffic Factors will be reviewed and approved by the Department prior to use in the analysis.

2.3.1 K-Factor

In accordance with the FDOT Project Traffic Forecasting Handbook 2019, the standard K-factor of 9.0 percent is recommended for use on this project.

2.3.2 D-Factor

D-factors will be determined based on field collected 72-hour approach and classification counts. A review of the 5-year average from the Florida Traffic Online (FTO) database count locations within the study area will be compared for consistency.

2.3.3 Design Hour Truck Factor

The truck percentage (T_{24}) will be calculated based on the weighted averages from the 72-hour vehicular classification counts for the study area and compared to the FTO database count stations within the study area for reasonableness. The Design Hour Truck (DHT) percentage used for analysis will be calculated as T_{24} divided by 2.

2.3.4 Peak Hour Factor

A peak hour factor (PHF) of 0.95 will be used for all Synchro analyses.

2.4 Existing Year (2022) Directional Design Hour Volumes

The existing year (2022) Annual Average Daily Traffic (AADT) volumes will be developed beginning with taking the 72-hour approach and 72-hour classification counts and taking their daily average to develop the Average Daily Traffic (ADT) throughout the corridor. To normalize the ADT to AADT, two adjustment factors, axle correction factors (ACF) and seasonal factors (SF), will be applied to the ADT to yield AADTs. It should be noted that ACF will not be applied to 72-hour classification count locations.

FDOT FTO database counts will be used to supplement the collected field data as needed and used as a point of comparison as a reasonability check to the field data collection effort. AADTs will be reviewed throughout the study area to ensure demand throughout the network did not represent any unreasonable imbalance.

The existing year (2022) AADTs yielded by this review will serve as the basis for the development of AM and PM Directional Design Hour Volume (DDHV) and turning movement volumes. The existing year (2022) AADT volumes will then be multiplied by K and D factors to obtain existing year (2022) AM and PM DDHVs. The resultant DDHVs from this method will be smoothed and compared to field collected data to check for reasonableness. The DDHVs will be adjusted to account for situations where resultant volumes are lower than the measured count data.

The intersection turning movement counts contained within the study area will serve as the basis for intersection volume distribution. DDHVs will be distributed by field measured turning movement percentages ensuring no loss between study intersections and then checked for reasonableness.

3.0 Microsimulation Calibration

3.1 VISSIM Microsimulation Calibration Methodology

PTV VISSIM 2020 (service pack 14) will be used to conduct this analysis. The Vissim microsimulation model will be calibrated with collected travel time data and field collected volume data. A three-hour AM and a three-hour PM peak period will be conducted using 15-minute flow rates. The extended period of microsimulation analysis will demonstrate the build-up and duration of traffic congestion. The evaluation of existing traffic operations will be based on the results of ten (10) runs of the AM and PM Vissim microsimulation models using varying random seed numbers. The microsimulation will be performed consistent with guidelines provided in the Federal Highway Administration (FHWA) Traffic Analysis Toolbox Volume III and the FDOT 2019 Traffic Analysis Handbook, A Reference for Planning and Operations. The calibration metrics and targets shown in Table 3.1 were selected from the FDOT 2019 Traffic Analysis Handbook.

Table 3.1: Microsimulation Targets

Calibration Metric	Calibration Measure	Calibration Target
Volume	Individual link flows: Within 15%, for 700 veh/h < Flow < 2,700 veh/h Within 100 veh/h, for Flow <700 veh/h Within 400 veh/h, for Flow >2,700 veh/h	> 85% of cases
	Links with a GEH statistic value of five (5) or lower.	>85% of cases
	Sum of all link flows	Within 5% of sum of all link counts
	Sum of link volumes GEH	<5
Speed	Within 10% (or 10mph, if higher)	>85% of cases
Queue	Queues in observed conditions (Qualitative)	Observation of similar conditions within model

4.0 Travel Demand Forecasting

4.1 Travel Demand Model

The modeling efforts for this analysis will be based off the Tampa Bay Regional Planning Model (TBRPM), Version 9.3 with the base year 2015 and horizon year 2045. This study will expand on the 2015 model validation efforts, check the model for reasonableness, and, if necessary, make additional adjustments to improve accuracy. The guidelines of the FDOT Project Traffic Forecasting Handbook 2019 will be used as the criteria for evaluating model validity.

Base year adjustments will be carried over to the 2045 model structure and zonal data (ZDATA) will be reviewed to ensure demand within the project area is reasonable. Special attention to ZDATA will be paid to ensure all surrounding Developments of Regional Impact (DRIs) and Master Planned Unit Developments (MPUDs) are accounted for during forecasting. This includes several redevelopments along the study corridor including Uptown, The Yuengling Plaza, and The Moffitt Center.

The resulting forecasted 2045 Peak Season Weekday Average Daily Traffic (PSWADT) will be converted to 2045 AADTs using the appropriate Model Output Conversion Factor (MOCF). The resulting 2045 AADTs will be reviewed for reasonableness and forecasting consistency. If any adjustment is needed, they will be made utilizing processes and procedures found in Section 3 of the FDOT Project Traffic Forecasting Handbook 2019. Design year (2045) AADTs yielded from this process will serve as the basis for volume development under the No-Build and Build scenarios. Opening year (2025) AADTs will be developed through use of linear interpolation under the No-Build scenario.

4.2 Forecast Directional Design Hour Volume Calculations

The design year (2045) and opening year (2025) DDHVs will be developed using the same procedure by which the existing year (2022) DDHVs were developed in Section 2.4 with the process beginning from the forecasted design year (2045) AADTs. The DDHVs that result from this process will be reviewed to ensure growth for every movement within the study area.

5.0 Technical Analysis

5.1 Operational Analysis

Operational analysis will be conducted at the following study intersections:

- Fowler Avenue at Florida Avenue
- Fowler Avenue at SB I-275 Ramps
- Fowler Avenue at NB I-275 Ramps
- Fowler Avenue at Nebraska Avenue
- Fowler Avenue at 12th Street (Future Years Only)
- Fowler Avenue at 14th Street (Future Years Only)
- Fowler Avenue at 15th Street
- Fowler Avenue at 17th Street (Future Years Only)
- Fowler Avenue at 19th Street (unsignalized)
- Fowler Avenue at University Town Center west entrance (unsignalized)
- Fowler Avenue at 22nd Street
- Fowler Avenue at University Town Center east entrance (unsignalized)
- Fowler Avenue at Club Drive (unsignalized)
- Fowler Avenue at University Collections main entrance/Quality Inn driveway
- Fowler Avenue at Bruce B. Downs Boulevard
- Fowler Avenue at Spectrum Boulevard/McKinley Drive
- Fowler Avenue at Lee Roy Collins Boulevard
- Fowler Avenue at USF Bull Run Drive/MOSI driveway
- Fowler Avenue at 50th Street
- Fowler Avenue at 56th Street.

Signal timing plans will be obtained from the maintaining agencies at the existing signalized intersections. Future operational analysis will consider the existing signal parameters and will not optimize the signal timings. Operational analysis will be performed using PTV Vissim 2020 (SP 14).

5.2 Alternatives Development

Alternatives screening for this study will be conducted to develop three transit corridor alternatives converting a general-purpose/continuous right turn lane into a transit prioritized/exclusive lane to accommodate transit service from SR 45/Nebraska Avenue to CR 581/Bruce B. Downs Boulevard/North 30th Street. Additionally, an innovative intersection configuration comprised of Median U-Turns (MUT) and Restricted Crossing U-Turns (R-CUT) will be analyzed. All study intersections under the Build Alternative will also be examined for geometry and control enhancements to improve operations. However, improvements at these intersections will be limited to Transportation System Management and Operations (TSM&O) enhancements.

5.2.1 Alternatives Development Measures of Effectiveness (MOEs)

Build Alternatives will be analyzed using Synchro 11 for design year (2045). The LOS target shall be "D" within urbanized areas for proposed improvements through the PD&E Study, consistent with the FDOT

2019 Quality/Level of Service (LOS) Handbook. The following MOEs will be used during alternative development. Based on the alternatives analyzed a single alternative will be selected for each intersection to be brought forward into a single Vissim analysis.

Intersection MOEs

The MOEs for the study intersections will include:

- Synchro 95th percentile queues and available storage;
- HCM 6th edition (HCM 2000 if HCM 6th edition not compatible) movement and overall intersection control delay and Level of Service (LOS).

5.3 Vissim Measures of Effectiveness (MOEs)

Vissim will be used to analyze one Build Alternative developed using methodology referenced in section 5.2. Three-hour AM and PM peak-period analyses, with a 30-minute seeding period, will be conducted using 15-minute flow rates with microsimulation for the existing year (2022), opening year (2025), and design year (2045). The Measures of Effectiveness (MOE) assessed from the Vissim models include the following:

5.3.1 Intersection MOEs

The MOEs for the study intersections will include:

- Maximum queue and available storage;
- Movement and overall intersection control delay; and
- Movement and overall intersection LOS.

5.3.2 Arterial MOEs

The MOEs for arterial operations will include:

- Arterial speed; and
- Arterial LOS.

5.3.3 Systemwide MOEs

The MOEs for systemwide operations will include:

- Traffic volume summary including unserved traffic demand;
- Total travel time;
- Total travel delay;
- Average speed; and
- Vehicle Miles of Travel.

5.4 Analysis Years

Travel Demand Model

- Base year – 2015
- Horizon year – 2045

Traffic Operational Analysis

- Existing year – 2022
- Opening year – 2025
- Design year – 2045

5.5 Safety Analysis

Historical crash analysis will be conducted for the most recent five (5) years (2015-2019) of data in accordance with the FDOT "PD&E Manual, Section 2.2.8.1". Analysis will be conducted leveraging FDOTs Crash Analysis Reporting (CAR) Online and Signal Four Analytics. Any duplicate crash records between the two databases will be removed. Historical analysis will be conducted, and existing safety concerns will be identified to serve as a basis for crash countermeasure selection.

Crash analysis will be summarized by the following metrics:

- Crash Frequency;
- Crash Severity;
- Crash Type;
- Pavement Condition;
- Lighting Condition;
- Intersection Crash Rates;
- Arterial Crash Rates; and
- Economic Loss.

5.6 Documentation

Project submittal for this effort will include:

- Vissim Calibration Report;
- Sub-Area Model Validation and Forecast Report; and
- Project Traffic Analysis Report.

Appendix B

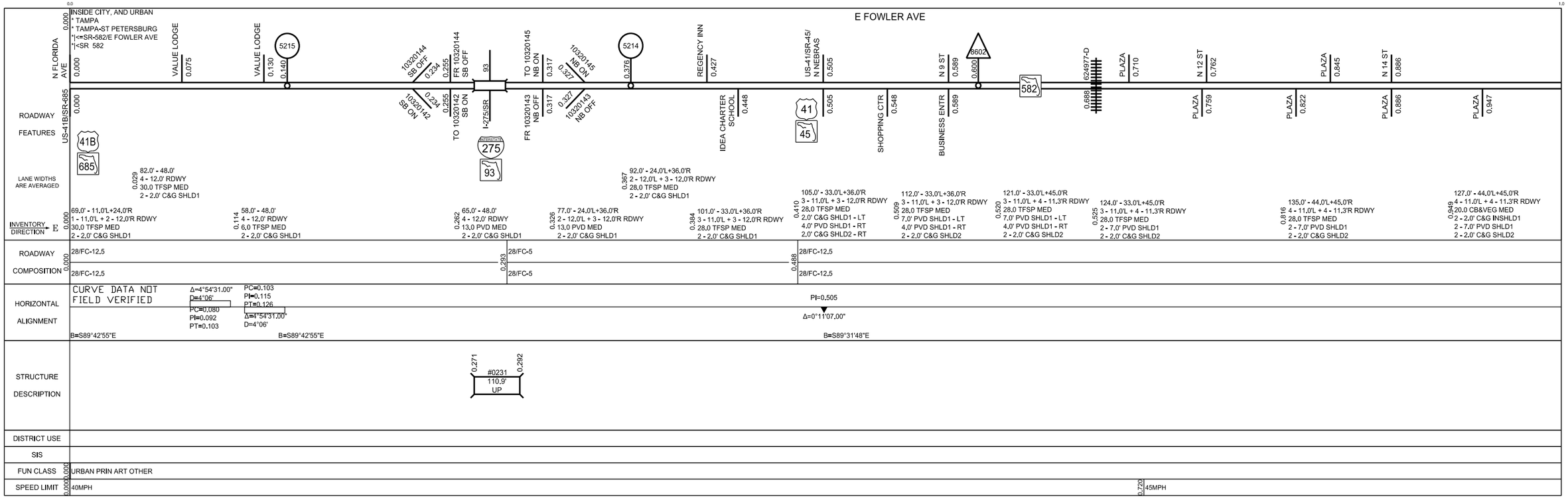
Straight Line Diagrams

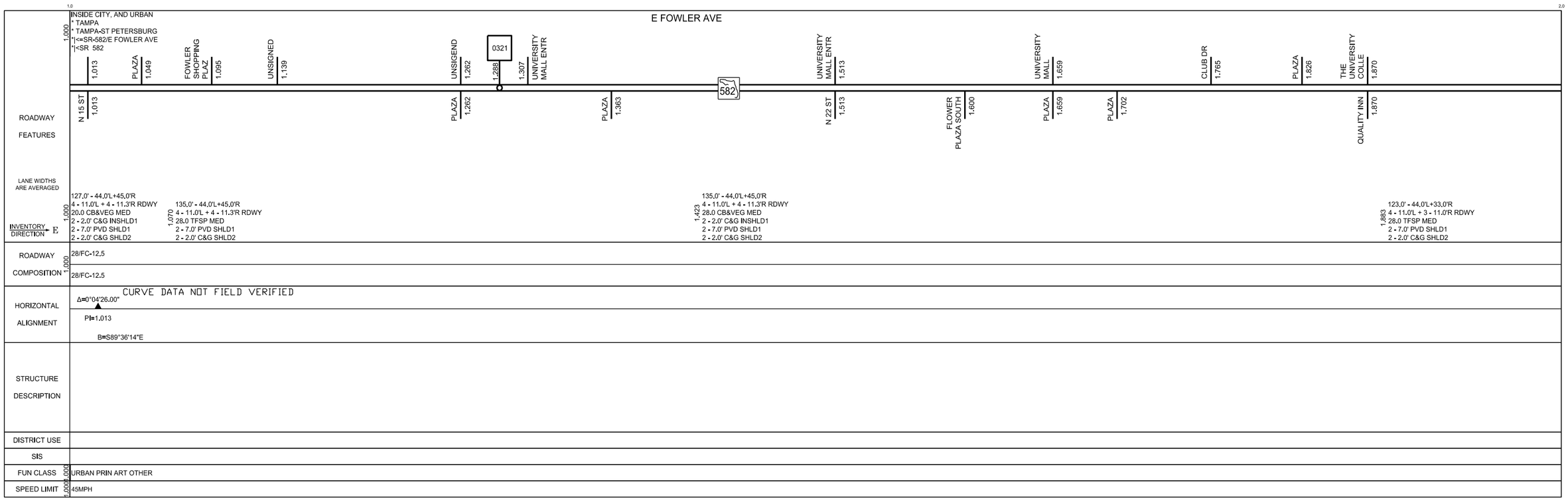
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	12/02/2021	01/12/2022	000,448	000,448	03/31/2022 CTS	03/31/2022 CTS
BY	CTS	CTS				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02		SR 582	HILLSBOROUGH	07	10290000	1 OF 4





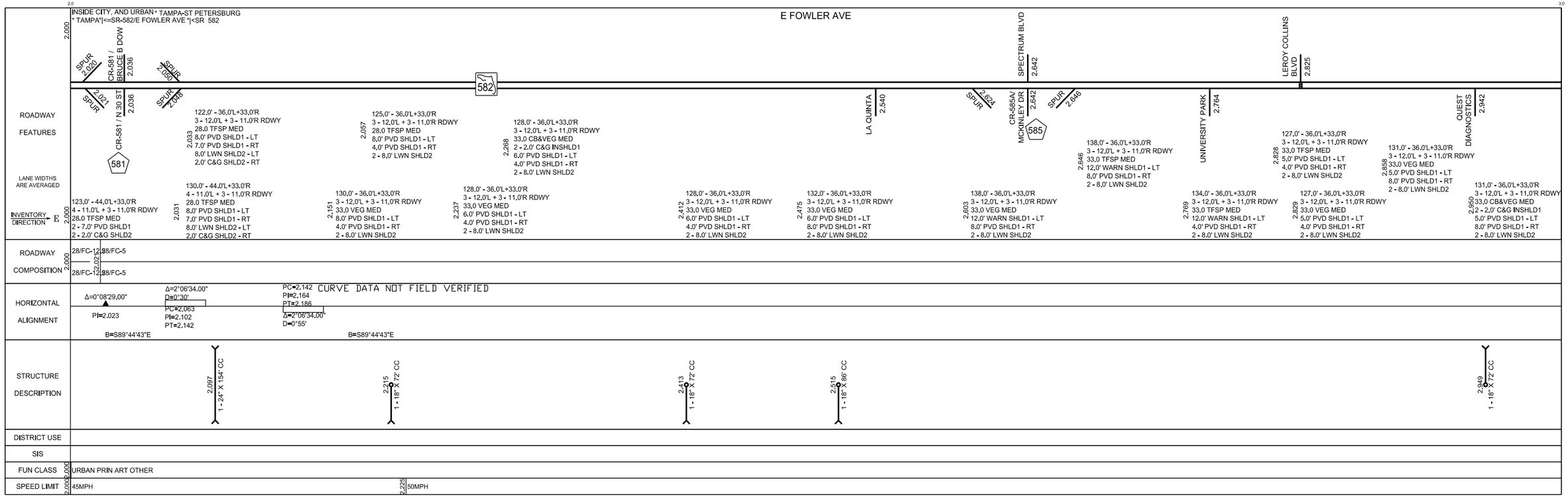
Version: 1,4,2,27 03/31/2022

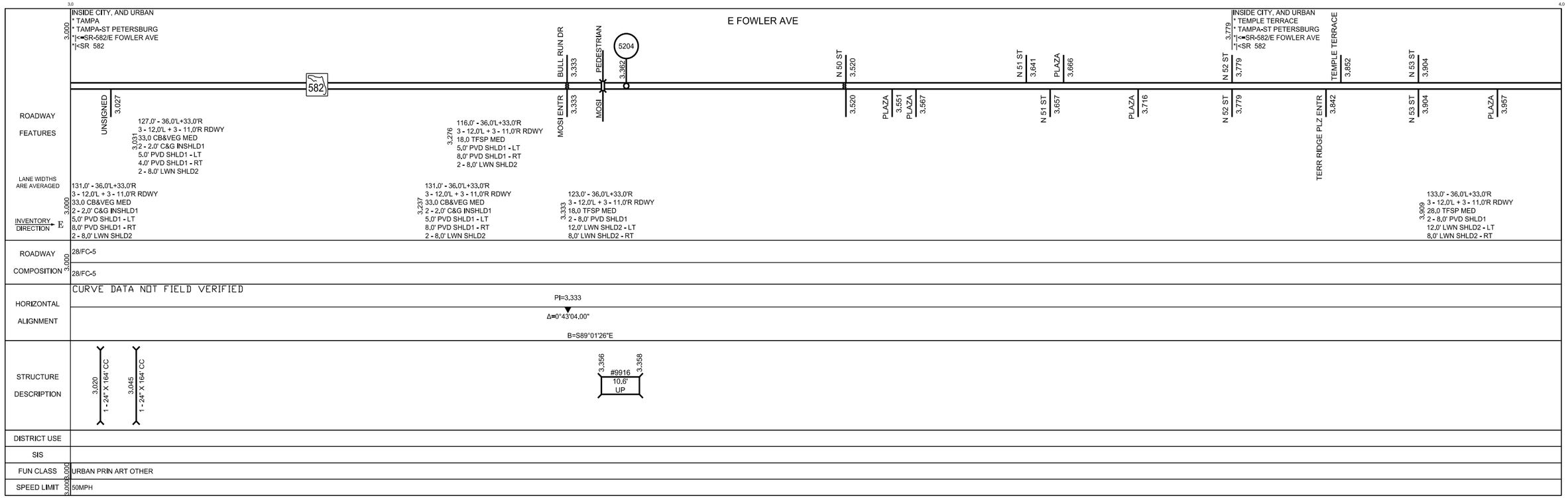
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	12/02/2021	01/12/2022				
BY	CTS Engineering	CTS Engineering				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02		SR 582	HILLSBOROUGH	07	10290000	2 OF 4





	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	12/02/2021	01/12/2022				
BY	CTS Engineering	CTS Engineering				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02		SR 582	HILLSBOROUGH	07	10290000	3 OF 4

4.0 — 5.0

INSIDE CITY, AND URBAN * TAMPA-ST PETERSBURG *|<SR 582
* TEMPLE TERRACE *|<=SR-582/E FOWLER AVE

E FOWLER AVE

ROADWAY FEATURES

4.000: CR-583 / N 56 ST 4.019 — BUSINESS CENTER 4.141 — N 58 ST 4.160 — N 60 ST 4.282 — RAINTREE BLVD 4.495 — HOYT AVE 4.744 — OBAN AVE 4.859 — FIFE AVE 4.920 — SYCAMORE PL 4.970

SR-583/N 56 ST 4.019 — PLAZA 4.160 — RIDGEDALE RD 4.282 — SUMMIT WEST APT ENTR 4.378 — UNSIGNED 4.459 — N 62 ST 4.530 — MOFFAT PL 4.804

4.173: 124,0' - 36,0'L+33,0'R; 3 - 12,0'L + 3 - 11,0'R RDWY; 23.0 TFSP MED; 4.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 12.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

4.526: 124,0' - 36,0'L+33,0'R; 3 - 12,0'L + 3 - 11,0'R RDWY; 23.0 CB&VEG MED; 2 - 2.0' C&G INSHLD1; 2 - 4.0' PVD SHLD1; 2 - 12.0' LWN SHLD2

LANE WIDTHS ARE AVERAGED

4.000 — **INVENTORY DIRECTION** E

133,0' - 36,0'L+33,0'R; 3 - 12,0'L + 3 - 11,0'R RDWY; 28.0 TFSP MED; 2 - 8.0' PVD SHLD1; 12.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

4.139: 128,0' - 36,0'L+33,0'R; 3 - 12,0'L + 3 - 11,0'R RDWY; 23.0 TFSP MED; 2 - 8.0' PVD SHLD1; 12.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

4.500: 124,0' - 36,0'L+33,0'R; 3 - 12,0'L + 3 - 11,0'R RDWY; 23,0 CB&VEG MED; 2 - 2,0' C&G INSHLD1; 4.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 12.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

4.380: 124,0' - 36,0'L+33,0'R; 3 - 12,0'L + 3 - 11,0'R RDWY; 23,0 CB&VEG MED; 2 - 2,0' C&G INSHLD1; 4.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 12.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

ROADWAY COMPOSITION

4.000: 28/FC-5

28/FC-5

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED

PI=4,038

Δ=0°03'00.00"

B=S88°58'26"E

STRUCTURE DESCRIPTION

DISTRICT USE

SIS

FUN CLASS

4.000: URBAN PRIN ART OTHER

SPEED LIMIT

4.000: 50MPH

5.0 — 6.0

INSIDE CITY, AND URBAN * TAMPA-ST PETERSBURG
* TEMPLE TERRACE *|<=SR-582/E FOWLER AVE *|<SR 582

E FOWLER AVE

ROADWAY FEATURES

5.000: SHOPPES OF VICTORIAN 5.008 — GILLETTE AVE 5.028 — GRECO MIDDLE SCH ENT 5.070 — GRECO MIDDLE SCHOOL 5.133 — TERRCE OAKS 5.224 — GREENHILL PL 5.266 — NORTH DR 5.330 — N.RIVERHILLS DR 5.547 — GAIL DR 5.698 — 0118 5.730 — RIVER — HILLSBOROUGH 5.784 — MORRIS BRIDGE RD 5.941

5.028 — 5.547 — 5.941

5.757: 158,0' - 48,0'L+33,0'R; 4 - 12.0'L + 3 - 11.0'R RDWY; 41.0 VEG MED; 20.0' WARN SHLD1 - LT; 8.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - RT

5.784: 158,0' - 48,0'L+33,0'R; 4 - 12,0'L + 3 - 11,0'R RDWY; 41,0 VEG W/ BAR MED; 20.0' WARN SHLD1 - LT; 8.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - RT

5.885: 158,0' - 48,0'L+33,0'R; 4 - 12,0'L + 3 - 11,0'R RDWY; 41,0 VEG MED; 20.0' WARN SHLD1 - LT; 8.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - RT

LANE WIDTHS ARE AVERAGED

5.000 — **INVENTORY DIRECTION** E

124.0' - 36.0'L+33.0'R; 3 - 12.0'L + 3 - 11.0'R RDWY; 23.0 CB&VEG MED; 2 - 2.0' C&G INSHLD1; 4.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 12.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

5.167: 123.0' - 36.0'L+33.0'R; 3 - 12.0'L + 3 - 11.0'R RDWY; 23.0 CB&VEG MED; 2 - 2.0' C&G INSHLD1; 4.0' PVD SHLD1 - LT; 3.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - LT; 2 - 12.0' LWN SHLD2

5.322: 123.0' - 36.0'L+33.0'R; 3 - 12.0'L + 3 - 11.0'R RDWY; 23.0 CB&VEG MED; 2 - 2.0' C&G INSHLD1; 8.0' PVD SHLD1 - LT; 3.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - LT; 12.0' LWN SHLD2 - RT

5.424: 124.0' - 36.0'L+33.0'R; 3 - 12.0'L + 3 - 11.0'R RDWY; 23.0 CB&VEG MED; 2 - 2.0' C&G INSHLD1; 2 - 8.0' PVD SHLD1; 2 - 8.0' LWN SHLD2

5.531: 120.0' - 36.0'L+33.0'R; 3 - 12.0'L + 3 - 11.0'R RDWY; 23.0 CB&VEG MED; 2 - 2.0' C&G INSHLD1; 5.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 7.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

5.608: 138.0' - 36.0'L+33.0'R; 3 - 12.0'L + 3 - 11.0'R RDWY; 41.0 VEG MED; 5.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 7.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

5.745: 150.0' - 48.0'L+33.0'R; 4 - 12.0'L + 3 - 11.0'R RDWY; 41.0 VEG MED; 5.0' PVD SHLD1 - LT; 8.0' PVD SHLD1 - RT; 7.0' LWN SHLD2 - LT; 8.0' LWN SHLD2 - RT

5.767: 158.0' - 48.0'L+33.0'R; 4 - 12.0'L + 3 - 11.0'R RDWY; 41.0 VEG W/ GRD MED; 20.0' WARN SHLD1 - LT; 8.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - RT

5.843: 158.0' - 48.0'L+33.0'R; 4 - 12.0'L + 3 - 11.0'R RDWY; 41.0 VEG W/ GRD MED; 20.0' WARN SHLD1 - LT; 8.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - RT

5.973: 151.0' - 48.0'L+24.0'R; 4 - 12.0'L + 2 - 12.0'R RDWY; 43.0 VEG MED; 2 - 3.0' PVD INSHLD1; 20.0' WARN SHLD1 - LT; 8.0' PVD SHLD1 - RT; 8.0' LWN SHLD2 - RT

ROADWAY COMPOSITION

5.000: 28/FC-5

28/FC-5

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED

Δ=0°02'00.00"

PI=5.043

B=S89°00'26"E

PI=5.548

Δ=0°09'04.00"

B=S88°51'22"E

STRUCTURE DESCRIPTION

5.790 — 5.851 — #0678 322.1' BR

#0402 311.5' BR — 5.796 — 5.855

5.910: 1 - 18" X 105' CC

DISTRICT USE

SIS

FUN CLASS

5.000: URBAN PRIN ART OTHER

SPEED LIMIT

5.000: 50MPH

5.645: 55MPH

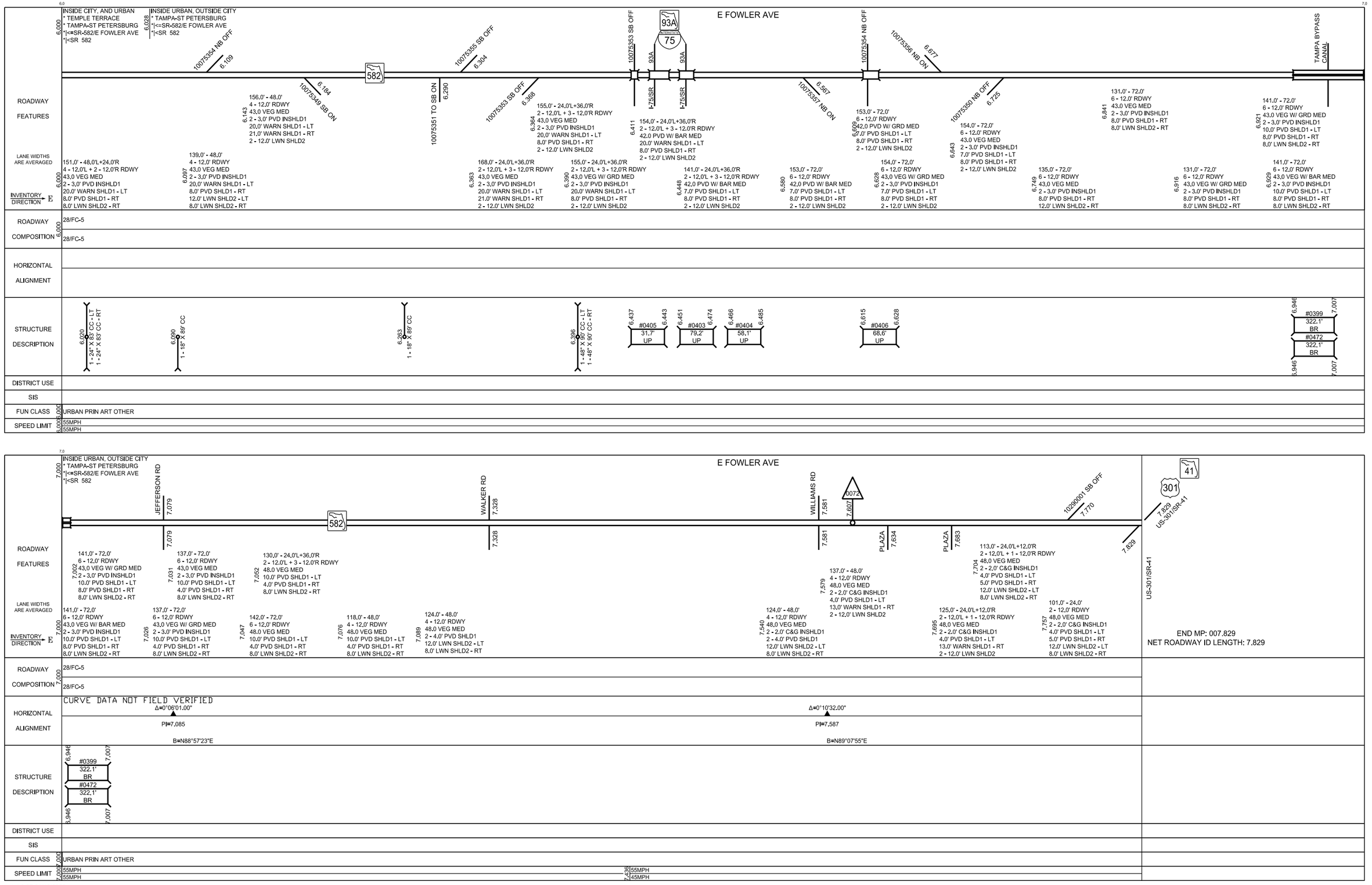
55MPH

	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	12/02/2021	01/12/2022				
BY	CTS Engineering	CTS Engineering				

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
02		SR 582	HILLSBOROUGH	07	10290000	4 OF 4



Version: 1.4.2.27 01/12/2022

Appendix C

Design Traffic Factor Technical Memorandum

Design Traffic Factor Technical Memorandum *(Draft)*

Project Development and Environment (PD&E) Study

Hillsborough County, Florida
SR 582/Fowler Avenue from N. Florida Avenue to N. 56th Street/SR 583

Financial Project ID: 448505-1-22-01

Prepared For:
Florida Department of Transportation, District 7
11201 McKinley Drive, Tampa, FL 33612

August, 2022

1.0 Memorandum Purpose

The purpose of this memorandum is to summarize the recommendations made for design traffic factors that will be employed to develop of design level traffic to support the SR 582/Fowler Avenue, from North Florida Avenue to North 56th Street, Project Development and Environment (PD&E) Study. These factors were developed in accordance with the Florida Department of Transportation (FDOT) Project Traffic Forecasting Handbook, 2019.

1.1 Design Hour Factor (K Factor)

In accordance with the FDOT Project Traffic Forecasting Handbook 2019, the standard K-factor of 9.0 percent is recommended for use on this project.

1.2 Directional Distribution Factor (D Factor)

D-factors were examined from the field collected 72-hour approach and classification counts and are presented for Fowler Avenue and the cross streets along the project corridor in **Table 2** and **Table 3**, respectively. The 5-year average D Factor from Florida Traffic Online (FTO) is included as a check for consistency in the data and is for comparison purposes only.

Based on an examination of the collected volumes during the AM and PM peak hours, it was determined to utilize the PM peak hour D Factors for use in this analysis. Directionality will maintain the field observed AM and PM peak hour peak directions in the application of the D Factor.

1.3 Percent Trucks

The percent of trucks (T_{24}) was examined from the field collected 72-hour approach and classification counts and are presented for Fowler Avenue and the cross streets along the project corridor in **Table 4** and **Table 5**, respectively. The 5-year average T_{24} Factor from Florida Traffic Online (FTO) is included as a check for consistency in the data and is for comparison purposes only. The Design Hour Truck (DHT) percentage used for analysis will be calculated as T_{24} divided by 2. The recommended T_{24} was calculated based on the weighted averages from the 72-hour vehicular classification counts for both Fowler Avenue and cross streets.

1.4 Recommended Design Traffic Factors

Based upon the review of the data collection efforts, recommended Design Traffic Factors can be found in **Table 1**.

Table 1: Recommended Traffic Factors

Location	K Factor	D Factor	T 24	DHT
Fowler Avenue	0.09	50.4% to 63.0%	4.5%	3.0%
Cross Streets	0.09	50.2% to 67.1%	5.2%	3.0%

Table 2: Field Collected Directional Factor Calculations – Fowler Avenue

Location	Area Type	Roadway Orientation	AM Peak Hour Total Volume (2022 Field Observed)				PM Peak Hour Total Volume (2022 Field Observed)				Calculated D Factor (2022 Field Observed)		FTO Five Year Average (2017-2021)	Recommended D Factor
			Bi-Directional	NB/EB	SB/WB	Peak Direction	Bi-Directional	NB/EB	SB/WB	Peak Direction	D (AM)	D (PM)		
Along Fowler Avenue														
W. Country Club Drive west of Florida Avenue	Urban	E/W	561	332	229	East	512	192	320	West	59.2%	62.5%	58.6%	**62.5%**
Fowler Avenue between Florida Avenue and SB I-275 Ramps	Urban	E/W	1,636	799	837	West	1,456	734	722	East	51.2%	50.4%	58.6%	**50.4%**
Fowler Avenue between I-275 NB Ramps and Nebraska Avenue	Urban	E/W	3,148	1,896	1,252	East	3,520	1,303	2,217	West	60.2%	63.0%	58.6%	**63.0%**
Fowler Avenue east of Nebraska Avenue	Urban	E/W	3,832	2,265	1,567	East	4,055	1,747	2,308	West	59.1%	56.9%	58.9%	**56.9%**
Fowler Avenue west of 15th Street	Urban	E/W	3,661	2,134	1,527	East	4,164	1,650	2,514	West	58.3%	60.4%	58.9%	**60.4%**
Fowler Avenue east of 15th Street	Urban	E/W	3,418	1,933	1,485	East	3,937	1,735	2,202	West	56.6%	55.9%	58.9%	**55.9%**
Fowler Avenue west of 22nd Street	Urban	E/W	3,217	1,766	1,451	East	3,631	1,536	2,095	West	54.9%	57.7%	58.9%	**57.7%**
Fowler Avenue east of 22nd Street	Urban	E/W	3,311	1,950	1,361	East	3,810	1,714	2,096	West	58.9%	55.0%	58.9%	**55.0%**
Fowler Avenue west of University Collections main entrance	Urban	E/W	3,064	1,834	1,230	East	3,773	1,700	2,073	West	59.9%	54.9%	58.9%	**54.9%**
Fowler Avenue west of Bruce B. Downs Boulevard	Urban	E/W	3,273	1,835	1,438	East	4,003	1,586	2,417	West	56.1%	60.4%	58.9%	**60.4%**
Fowler Avenue east of Bruce B. Downs Boulevard	Urban	E/W	3,727	2,042	1,685	East	4,232	1,998	2,234	West	54.8%	52.8%	58.6%	**52.8%**
Fowler Avenue east of Spectrum Boulevard/McKinley Drive	Urban	E/W	3,695	1,646	2,049	West	4,052	2,112	1,940	East	55.5%	52.1%	58.6%	**52.1%**
Fowler Avenue between LeRoy Collins Boulevard and 46th Street	Urban	E/W	4,240	1,664	2,576	West	4,516	2,572	1,944	East	60.8%	57.0%	58.6%	**57.0%**
Fowler Avenue east of 46th Street	Urban	E/W	4,278	1,685	2,593	West	4,419	2,498	1,921	East	60.6%	56.5%	58.6%	**56.5%**
Fowler Avenue between USF Bull Run Drive/MOSI driveway and 50th Street	Urban	E/W	4,339	1,555	2,784	West	4,457	2,549	1,908	East	64.2%	57.2%	58.6%	**57.2%**
Fowler Avenue east of 50th Street	Urban	E/W	4,317	1,709	2,608	West	4,387	2,592	1,795	East	60.4%	59.1%	58.6%	**59.1%**
Fowler Avenue west of 56th Street	Urban	E/W	4,124	1,599	2,525	West	4,249	2,373	1,876	East	61.2%	55.8%	58.6%	**55.8%**
Fowler Avenue east of 56th Street	Urban	E/W	3,876	1,768	2,108	West	4,298	2,657	1,641	East	54.4%	61.8%	58.6%	**61.8%**

Table 3: Field Collected Directional Factor Calculations – Count Locations Cross Streets

Location	Area Type	Roadway Orientation	AM Peak Hour Total Volume (2022 Field Observed)				PM Peak Hour Total Volume (2022 Field Observed)				Calculated D Factor (2022 Field Observed)		FTO Five Year Average (2017-2021)	Recommended D Factor
			Bi-Directional	NB/EB	SB/WB	Peak Direction	Bi-Directional	NB/EB	SB/WB	Peak Direction	D (AM)	D (PM)		
Cross Streets														
Florida Avenue north of Fowler Avenue	Urban	N/S	1,861	653	1,208	South	1,815	1,029	786	North	64.9%	56.7%	58.6%	**56.7%**
Florida Avenue south of Fowler Avenue	Urban	N/S	2,067	629	1,438	South	1,769	986	783	North	69.6%	55.7%	58.6%	**55.7%**
I-275 Northern Ramps	Urban	N/S	1,316	386	930	South	1,140	726	414	North	70.7%	63.7%	100.0%	**63.7%**
I-275 Southern Ramps	Urban	N/S	2,191	1,218	973	North	2,188	721	1,467	South	55.6%	67.0%	100.0%	**67.0%**
Nebraska Avenue north of Fowler Avenue	Urban	N/S	1,899	794	1,105	South	1,980	986	994	South	58.2%	50.2%	58.6%	**50.2%**
Nebraska Avenue south of Fowler Avenue	Urban	N/S	1,764	758	1,006	South	1,647	934	713	North	57.0%	56.7%	58.6%	**56.7%**
15th Street north of Fowler Avenue	Urban	N/S	502	243	259	South	590	335	255	North	51.6%	56.8%	NA	**56.8%**
15th Street south of Fowler Avenue	Urban	N/S	501	235	266	South	585	239	346	South	53.1%	59.1%	58.6%	**59.1%**
19th Street north of Fowler Avenue	Urban	N/S	192	107	85	North	306	165	141	North	55.7%	53.9%	NA	**53.9%**
22nd Street south of Fowler Avenue	Urban	N/S	449	272	177	North	656	323	333	South	60.6%	50.8%	58.6%	**50.8%**
Club Drive north of Fowler Avenue	Urban	N/S	169	110	59	North	267	114	153	South	65.1%	57.3%	NA	**57.3%**
Bruce B Downs Boulevard north of Fowler Avenue	Urban	N/S	3,245	1,640	1,605	North	2,775	1,275	1,500	South	50.5%	54.1%	58.6%	**54.1%**
30th Street south of Fowler Avenue	Urban	N/S	1,852	711	1,141	South	2,107	1,097	1,010	North	61.6%	52.1%	NA	**52.1%**
Spectrum Boulevard north of Fowler Avenue	Urban	N/S	243	152	91	North	274	70	204	South	62.6%	74.5%	NA	**67.1%**
McKinley Drive south of Fowler Avenue	Urban	N/S	1,639	548	1,091	South	1,502	872	630	North	66.6%	58.1%	58.6%	**58.1%**
LeRoy Collins Boulevard north of Fowler Avenue	Urban	N/S	519	417	102	North	828	269	559	South	80.3%	67.5%	NA	**67.1%**
46th Street south of Fowler Avenue	Urban	N/S	377	98	279	South	367	191	176	North	74.0%	52.0%	58.6%	**52.0%**
USF Bull Run Drive north of Fowler Avenue	Urban	N/S	384	310	74	North	287	97	190	South	80.7%	66.2%	NA	**66.2%**
MOSI driveway south of Fowler Avenue	Urban	N/S	8	4	4	South	15	13	2	North	50.0%	86.7%	NA	**67.1%**
50th Street north of Fowler Avenue	Urban	N/S	586	171	415	South	688	338	350	South	70.8%	50.9%	58.6%	**50.9%**
50th Street south of Fowler Avenue	Urban	N/S	386	250	136	North	528	325	203	North	64.8%	61.6%	NA	**61.6%**
56th Street north of Fowler Avenue	Urban	N/S	1,628	825	803	North	2,080	1,116	964	North	50.7%	53.7%	58.6%	**53.7%**
56th Street south of Fowler Avenue	Urban	N/S	1,844	957	887	North	2,332	1,290	1,042	North	51.9%	55.3%	58.6%	**55.3%**
University Town Center west entrance (unsignalized)	Urban	N/S	76	44	32	North	181	84	97	South	57.9%	53.6%	NA	**53.6%**
University Town Center main entrance (signalized)	Urban	N/S	208	114	94	North	389	181	208	South	54.8%	53.5%	NA	**53.5%**
University Town Center east entrance (unsignalized)	Urban	N/S	22	16	6	North	174	95	79	North	72.7%	54.6%	NA	**54.6%**
University Collections main entrance north of Fowler Avenue	Urban	N/S	119	70	49	North	478	187	291	South	58.8%	60.9%	NA	**60.9%**

Table 4: Field Collected Truck Factor Calculations – Fowler Avenue

Location	FTO Five Year Average (2017-2021)	T 24	DHT
Along Fowler Avenue			
W. Country Club Drive west of Florida Avenue	7.4%	2.9%	2.0%
Fowler Avenue between Florida Avenue and SB I-275 Ramps	3.7%	3.8%	2.0%
Fowler Avenue between I-275 NB Ramps and Nebraska Avenue	2.7%	2.8%	2.0%
Fowler Avenue east of Nebraska Avenue	2.4%	3.3%	2.0%
Fowler Avenue west of 15th Street	2.4%	2.2%	2.0%
Fowler Avenue east of 15th Street	2.4%	4.3%	3.0%
Fowler Avenue west of 22nd Street	2.4%	6.1%	4.0%
Fowler Avenue east of 22nd Street	2.4%	5.7%	3.0%
Fowler Avenue west of University Collections main entrance	2.4%	5.0%	3.0%
Fowler Avenue west of Bruce B. Downs Boulevard	2.4%	5.5%	3.0%
Fowler Avenue east of Bruce B. Downs Boulevard	2.8%	3.8%	2.0%
Fowler Avenue east of Spectrum Boulevard/McKinley Drive	2.8%	6.4%	4.0%
Fowler Avenue between LeRoy Collins Boulevard and 46th Street	2.8%	3.3%	2.0%
Fowler Avenue east of 46th Street	2.8%	5.4%	3.0%
Fowler Avenue between USF Bull Run Drive/MOSI driveway and 50th Street	2.8%	2.8%	2.0%
Fowler Avenue east of 50th Street	2.8%	3.7%	2.0%
Fowler Avenue west of 56th Street	2.8%	6.4%	4.0%
Fowler Avenue east of 56th Street	6.7%	6.1%	4.0%

Table 5: Field Collected Truck Factor Calculations – Count Locations Cross Streets

Location	FTO Five Year Average (2017-2021)	T 24	DHT
Cross Streets			
Florida Avenue north of Fowler Avenue	3.3%	3.4%	2.0%
Florida Avenue south of Fowler Avenue	3.5%	3.5%	2.0%
I-275 Northern Ramps	6.1%	4.7%	3.0%
I-275 Southern Ramps	3.3%	3.3%	2.0%
Nebraska Avenue north of Fowler Avenue	4.5%	6.0%	3.0%
Nebraska Avenue south of Fowler Avenue	4.3%	4.1%	3.0%
15th Street north of Fowler Avenue	NA	10.2%	6.0%
15th Street south of Fowler Avenue	7.4%	8.3%	5.0%
19th Street north of Fowler Avenue	NA	5.5%	3.0%
22nd Street south of Fowler Avenue	7.4%	4.0%	2.0%
Club Drive north of Fowler Avenue	NA	9.6%	5.0%
Bruce B Downs Boulevard north of Fowler Avenue	7.4%	5.9%	3.0%
Spectrum Boulevard north of Fowler Avenue	NA	15.3%	8.0%
McKinley Drive south of Fowler Avenue	4.6%	9.3%	5.0%
LeRoy Collins Boulevard north of Fowler Avenue	NA	4.9%	3.0%
46th Street south of Fowler Avenue	7.4%	7.1%	4.0%
USF Bull Run Drive north of Fowler Avenue	NA	6.8%	4.0%
MOSI driveway south of Fowler Avenue	NA	5.7%	3.0%
50th Street north of Fowler Avenue	7.4%	1.9%	1.0%
50th Street south of Fowler Avenue	NA	7.2%	4.0%
56th Street north of Fowler Avenue	8.5%	5.1%	3.0%
56th Street south of Fowler Avenue	3.2%	3.1%	2.0%

Appendix D

Socio-Economic Land Use Updates

Table 1. New Development Land Use Description and Conversion to Employees

Development Land Use Details		Employee (Using ITE 10th Edition Conversion Rates)				
Big Blocks	Description	Industrial Employee	Commercial Employee	Service Employee	Hotel units	GQ Population [2]
Landmark Student Housing	760 bed, 276 unit					760
Yuengling Center	A 200-room, 140,000-square-foot hotel				200	
	12,700-square-foot restaurant		67			
	7,000-square-foot museum gift shop		2			
	5,500-square-foot microbrewery and/or tasting room		13			
	5,300-square-foot indoor/outdoor beer garden		12			
	5,900 square feet of conference/meeting space			18		
Moffitt Cancer [1] Center	480,000-square-feet [1] (10-story hospital, 600 tradespeople on site each day,128 beds + additional 76 beds in future)			1201		

1. McKinley project is an expansion of the existing 1986 facility on USF's Magnolia Drive, "not a replacement."

2. Student Housing assumed as Group Quarter Population

ITE 10th Edition Conversion Rates						
Land Use	LU Code	Avg Trip Rate per bed/Room	Avg Trip Rate per 1000 sqft	Avg Trip Rate per employee	Employees per bed/room	Employees per 1000 sqft
Hospital (beds)	610	22.32	10.72	3.79	5.89	2.83
Restaurant	932		112.18	21.26		5.28
Museum	580		0.66	2.11		0.31
General office building	710		9.74	3.28		2.97
Shopping Center	820		37.75	16.11		2.34
General Light Industrial	110		4.96	3.05		1.63

Table 2. TBRPM Year 2045 Updated Land Use

	SE Data (TBRPM V9.3 2045_Y2015)											Revised SE Data (TBRPM V9.3 Y2045)					Changed Land Use Data				
		Industrial Employee		Commercial Employee		Service Employee		Hotel units		GQ Population											
Big Blocks	TAZ	2045	2015	2045	2015	2045	2015	2045	2015	2045	2015	Industrial Employee	Commercial Employee	Service Employee	Hotel units	GQ Population	Industrial Employee	Commercial Employee	Service Employee	Hotel units	GQ Population
Landmark Student Housing	179	28	40	768	690	1552	536	400	400	0	0					760	0	0	0	0	760
Yuengling Center	182	712	624	2	2	1068	1068	150	150	0	0		97	1086	350		0	95	18	200	0
Moffitt Cancer Center	184	890	914	23	23	2040	2046	130	0	0	0			3241			0	0	1201	0	0
Total Changed																	1313			200	760

Uptown District in Tampa continues to grow, evolve

JOSHUA MCMORROW-HERNANDEZ | TUESDAY, NOVEMBER 16, 2021

The Uptown District of North Tampa has seen an upswing of redevelopment in recent years thanks to the !p Tampa Innovation Partnership and other players fostering redevelopment in neighborhoods and along corridors surrounding the University of South Florida.

The change is coming in waves as several landmark projects break ground and top off around Uptown. Several of these key developments were celebrated at the annual !p Innovation Gathering, held at RITHM at Uptown (University Mall) in October.

The event's keynote speaker, Margaret O'Mara, author of *The Code: Silicon Valley and the Remaking of America and Cities of Knowledge: Cold War Science and the Search for the Next Silicon Valley*, suggested the Uptown District has what it takes to become the next Silicon Valley. She says the four "I's" to building a successful community are infrastructure, institutions, inclusion, and introspection.

"One hundred years ago Silicon Valley was the Prune Capital of the World. But it wasn't just farms," she says. "There were also companies making small electronics."
O'Mara says these tech firms were among the very first that preceded the computer cottage industries that made a home in the valley near San Jose, CA and helped birth the digital revolution in the 1960s, 1970s, and 1980s.

During those same decades, North Tampa swelled with its own brand of economic development, spurred by the

83 Degrees

opening of Busch Gardens in 1959 and the first classes at the University of South Florida (USF) in 1960, as well as other major players that moved into adjacent parcels. Many familiar names moved into North Tampa over the years that followed, including University Community Hospital (now AdventHealth Tampa) in 1968, James A. Haley Veterans Hospital in 1972, University Mall in 1974, and H. Lee Moffitt Cancer Center in 1986.

Fowler Avenue and other nearby corridors also swelled with new businesses during that time. Despite significant socioeconomic and demographic shifts around USF in more recent decades, major landmarks have remained while other parcels have emptied, opening opportunities to reimagine the future of the community.

New big kids on the block

One of the Uptown District anchors looking to make a new name for itself is Yuengling Brewery, which moved into Tampa 1999 and operates as the southern arm of the Pennsylvania brewing giant that serves as America's oldest brewery. Construction is ongoing adjacent to the brewery facility to create an outdoor gaming area, digital interactive museum, and 2.2-acre courtyard slated to open next year.

"We are building an experience that will delight Yuengling fans and we look forward to opening our doors for them in Fall 2022," says Jennifer Yuengling, sixth-generation family member and VP of operations at D.G. Yuengling & Son, Inc. "We are eager to get Yuengling enthusiasts onto our campus and for everyone to enjoy the new immersive experience that our partners are working to build."

Yuengling says these improvements at the Tampa campus symbolize the commitment she and her family have to the Tampa Bay Area, noting she and her family consider the region their "second home" and want to make further investments here.

"This is why we are always looking for ways to give back to and invest in the community that has given so much to us. With the revitalization of our Tampa campus, we hope to bring not just an immersive brand experience to the area, but also opportunities for local members of the community to join our family."

83 Degrees

These include opportunities for more female and minority brewers, many of whom may enter the fold through Yuengling's Diversity in Brewing Scholarship.

Construction continues on Moffitt, Yuengling expansions

Across the mega-block from the Yuengling Brewing, another major project is topping off with aims to serve cancer patients in the Tampa Bay Area and throughout the state of Florida. H. Lee Moffitt Cancer Center, based at the USF campus in Tampa, is on track to complete its new 10-story hospital in late 2023.

"Interior work is underway with about 600 tradespeople on site each day," reports Don Futrell, Moffitt Cancer Center VP of Planning, Design, and Construction, of the 480,000-square-feet project.

"The current phase of the project includes 128 beds plus two additional shelled floors to accommodate an additional 76 beds later 19 operating rooms, all related support and patient amenities areas, and a parking garage."

Despite encompassing a facility that appears to dwarf the original six-story core hospital and inpatient bed tower at the USF campus, Futrell says the McKinley project is an expansion of the existing 1986 facility on USF's Magnolia Drive, "not a replacement."

Dr. Bryan McIver, deputy physician in chief at Moffitt Cancer Center, says the hospital expansion will leverage Moffitt's expertise and resources in the organization's multidisciplinary approach to offer more cancer treatments and therapies than before.

"The hospital will offer a full suite of services that complement what is currently being provided at our other campuses, with expanded robotic surgery services, image-guided surgery, and minimally invasive surgery, all of which are less invasive, often more effective, and that allow for quicker recovery," says Dr. McIver.

83 Degrees

The hospital's imaging capacities will be increasing alongside implementation of more novel approaches to better detect cancer at earlier stages of growth and understand what is making them grow.

"We anticipate providing advanced radiation therapy techniques, including MRI-guided adaptive radiation that changes the field and dose of treatment depending on the tumor's response. In addition, proton therapy and other cutting-edge modalities will be available, to improve outcomes for our radiation therapy patients," Dr. McIver says.

Additional breakthrough services to be provided at the new facility will include cellular therapies that use a patient's own immune cells to seek out and fight their cancer.

"To enhance our patient experience, the new hospital will utilize innovative digital technologies," Dr. McIver says. "We are creating a digital front door that allows patients to easily access their information electronically, including their appointment itinerary, registration information, wayfinding through the hospital, medical records, and more."

The legacy project taps the talents of local contractors, including Barr & Barr of Tampa, which characterizes the new hospital facility as "one of the area's largest in recent years in terms of size, construction value, and most importantly in terms of positive impacts to our community" and says the collective effects of the Moffitt expansion on local businesses is "profound."

Moving forward on multiple fronts

Along with the expansion of Moffitt Cancer Center on McKinley Drive and the growing entertainment complex at Yuengling Brewery, North Tampa also has a variety of other major projects afoot, including The Motor Enclave motorsports complex and corporate event center near Tampa Executive Airport, coming restaurants and stores along Fowler and Fletcher Avenues, and a multifaceted ongoing review of new transit opportunities by Hillsborough Area Regional Transit across the Uptown District.

Meanwhile, RITHM at Uptown witnesses continued success in luring new science and research outfits, joining a

83 Degrees

cadre of medical and technology-based tenants at the former mall property, including Florida Blue, AMROC Fab Lab, and Diamond View Studios. It's the kind of innovative hub that O'Mara says sparked the creation of Silicon Valley in California a century ago.

"I'm not competing with Silicon Valley, you shouldn't be competing with Silicon," says RD Management Chief Development Strategist Chris Bowen, who says he first stepped into University Mall six years ago and envisioned opportunities would abound.

"Don't fixate on what you think this community is. Whatever you thought RITHM is, it'll be different tomorrow, because that's how it's designed," Bowen says. "You'll see more pieces of the puzzle every day."

Learn more at !p: POTENTIAL UNLEASHED.

Read more articles by Joshua McMorrow-Hernandez.

Joshua McMorrow-Hernandez is a freelance writer who was born and raised in Tampa. He earned his BA in English from the University of South Florida and spent more than three years as a full-time copywriter for a local internet marketing firm before striking out on his own to write for various blogs and periodicals, including TheFunTimesGuide, CoinValue and COINage magazine. He has also authored local history books, including Images of America: Tampa's Carrollwood and Images of Modern America: Tampa Bay Landmarks and Destinations, which are two titles produced by Arcadia Publishing.

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From the Tampa Bay Business Journal:
https://www.bizjournals.com/tampabay/news/2020/11/16/yuengling-tampa-redevelopment-to-break-ground.html

Yuengling moving forward with big redevelopment of Tampa brewery property — without a hotel, for now

Nov 16, 2020, 2:00pm EST

D.G. YUENGLING & SON, INC.

D.G. Yuengling & Son is moving forward with a redevelopment of its Tampa brewery — though plans to add a hotel to the property are on hold.

The brewery, based in Pottsville, Pennsylvania, held a "ceremonial" groundbreaking on Monday afternoon. Actual construction is slated to begin next month, said Jen Yuengling, the brewery's vice president of operations.

The Yuengling family acquired the Tampa brewery in 1999. The redevelopment comes as business and civic leaders try to rouse private sector interest in the area around the University of South Florida. While H. Lee Moffitt Cancer Center, the university and several other institutions are in the area, it has never reached its full development potential.

Yuengling said that the brewery has been a partner to USF for years, from the naming rights of the former Sundome to funding scholarships for the brewery arts program at the St. Petersburg campus.

"I think this is just the next step in that relationship," she said.

Tampa's Alliant Partners, led by Carlos Alfonso and Frank Capitano, is the developer of the project. Miller Bros. Construction Inc. is the general contractor, and Alfonso Architects designed the project.

Yuengling declined to disclose a total investment in the project or construction costs on the first phase.

Tampa City Council in October 2019 signed off on a rezoning request to make way for the redevelopment, which will add the following amenities to the brewery:

A 200-room, 140,000-square-foot hotel
12,700-square-foot restaurant
7,000-square-foot museum gift shop
5,500-square-foot microbrewery and/or tasting room of the same size
5,300-square-foot indoor/outdoor beer garden
5,900 square feet of conference/meeting space

The hotel, Yuengling said, is part of the project's second phase, set to begin construction after the first phase wraps up in early 2022. The family is considering bringing a restaurant operating partner on board, she said.

Ashley Gurbal Kritzer
Senior Reporter
Tampa Bay Business Journal

REAL ESTATE WEEKLY

Construction & Design

Landmark Properties to Develop the Metropolitan at Tampa to Serve the University of South Florida

by REW February 14, 2022 0 2387

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SHARE 1

Landmark Properties, a fully-integrated real estate firm specializing in development, construction, investment management, and operation of high-quality residential communities, today announced plans for a 760-bed purpose-built student housing community called The Metropolitan at Tampa. The project, located at 2701 E. Fowler Avenue in Tampa, Fla., will serve students at the University of South Florida. Construction is slated to begin in June with the property opening to students in August 2024.

The Metropolitan at Tampa offers student-driven design with high-quality amenities and premium modern finishes across several floor plans. Sizes range from studio to four-bedroom units. In total, the four-story residential community includes 276 units and 1,779-net-square-feet of ground floor retail space.

“The University of South Florida market has remained very attractive for Landmark,” said Wes Rogers, President and CEO of Landmark Properties. “We continue to see strong demand for well-located, highly-amenitized student housing near top-tier universities, and we are excited to deliver our third community near USF.”

The Metropolitan at Tampa will include popular amenities and high-end finishes students seek when looking for a home away from home. Residents will enjoy an expansive rooftop pool deck, ground floor courtyards, a fitness center, study and gaming lounges, and a variety of other amenities. Individual units come fully furnished with a complete appliance package (including washer and dryer) and are wired for high-speed internet and cable. Residents who drive will have access to the property’s 620-space covered parking deck.

The location, formerly a Quality Inn, is an easy walk to campus and the USF Botanical Gardens and is within walking distance of a variety of restaurants, convenience stores a

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retail outlets.

The University of South Florida is **ranked** #61 in Best Value Schools, according to U.S. News & World Report. USF is a public, urban research university with campuses in Tampa, St. Petersburg and Sarasota-Manatee, that attracts students from all 50 states and more than 140 countries who pursue undergraduate, graduate, specialist and doctoral degrees. Its Tampa campus, near The Metropolitan at Tampa, offers a large research university experience.

LANDMARK PROPERTIES

SHARE 1

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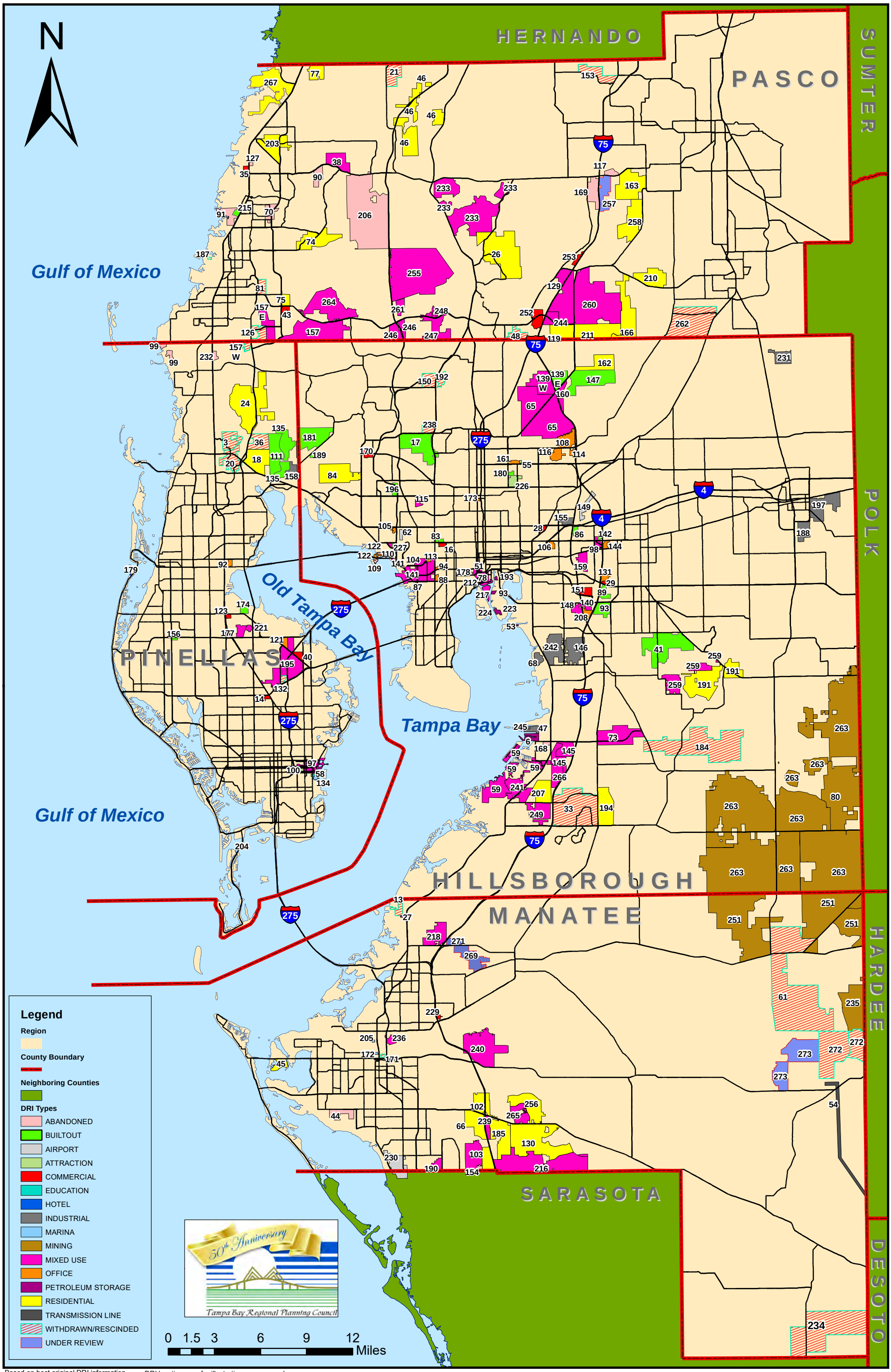
DRI Locations - Tampa Bay Region



Based on best original DRI information.
Updated: March 2012

DRI locations are for illustrative purposes only.
Please consult legal descriptions of respective
DRI development in order to obtain exact project boundaries.

DRI #	DCA ADA #	PROJECT NAME	LOCAL GOV'T/ A.R. LAST SUBMITTED	DATES			DEVELOPMENT PARAMETERS[1]					DEVELOPMENT ORDER AMENDMENT(S) (DATE, RESOL. #)[3]	NOTES[2]	INCONSISTENT WITH D.O. CONDITION #[4]
				D.O. ADOPT. (D.O. #)/ EFFECTIVE	A.R./B.R. DUE DATE	BUILDOUT/ EXPIRATION	LAND USE/ MEASURE	TOTAL APPROVED AMOUNT	SPECIFIC APPROVED AMOUNT	DURING RPT. YR.	CUMUL. DEV'T[43]			
45	875-042	Spoonbill Bay (aka Perico Bay)	Bradenton Not Appl.	5/28/1975 (# Not Appl.)	Not Appl.	None	Total Acres Residential (#) Retail (GSF) (Acres)	546 1,512 40,000 5.9	ALL	Not Available	850 0 0	3/11/87, # N/A	None	None
46	875-039	Sunset Lakes/ Highlands	Pasco Not Appl.	6/03/1975 (# Not Appl.)	Not Appl.	**EXPIRED** (6/03/1984)	Total Acres Residential (#)	2,281 2,782	ALL	Not Applicable	120	12/28/82,R83-41-A	None	**DEVELOPMENT ORDER HAS EXPIRED**
47	875-044	Agrico S/D (aka Agrico Storage Facilities)	Hills. Not Appl.	3/27/1974 (R. 74-5/DRI #23) 7/16/1975 (R. 75-12/DRI #47)	Not Appl.	**EXPIRED** (4/01/1988)	Total Acres Mining (Acs./Tons) Oil Stor(Acs./Barls.) Storage[6](Acs./Tons) Storage[7](Acs./Tons) PhosAcid (Acs./Gal)	8 / 195,000 5 / 140,000 4 / 50,000 4 / 40,000 N/A/ 105,000	ALL	Not Applicable	Not Available	10/09/74(# N/A) 9/06/78 (#N/A) 11/26/90 (#N/A) 9/02/81 (#N/A) 8/18/82 (#N/A) 3/25/86,R.86-0053	None	**DEVELOPMENT ORDER HAS EXPIRED**
48	875-062	Turtle Lakes	Pasco	**WITHDRAWN**			Not Applicable					Not Applicable	Not Applicable	**APPLICATION WAS WITHDRAWN**
49	N/A	Phillips Phosphate Mine (now CMI)	Manatee	**WITHDRAWN**			Not Applicable					Not Applicable	Not Applicable	**APPLICATION WAS WITHDRAWN**
50	875-060	Borden Big Four Mine (AMAX)	Hills.	**SEE DRI #80**			Not Applicable					Not Applicable	Not Applicable	**APPLICATION WAS WITHDRAWN**
51	876-005	Hillsborough Regional Service Center	Hills. Not Appl.	2/24/1976 (O. 6319-A)	Not Appl.	**EXPIRED** (12/31/1976)	Total Acres Retail (GSF) (Acres)	6.1 608,160 6.1	ALL	Not Applicable	608,160 6.1	4/27/76, O. 6360-A	None	**DEVELOPMENT ORDER HAS EXPIRED**
52	876-004	Four Corners Mine (Grace)	Manatee Hills.	**SEE DRI #198** **SEE DRI #263 (Subset)**			Not Applicable					Not Applicable	Not Applicable	Not Applicable
53	876-019	Port Sutton Petroleum Storage Facility	Hills. Not Appl.	10/28/1976 (# Not Appl.)	Not Appl.	None	Total Acres Storage[8] (Acres) (Barrels)	9.94 10 770,000	ALL	Not Available	10 620,000	None	None	Not Available
54	N/A	Keentown-Whidden Transmission Line	Manatee/ Hardee/ DeSoto	8/15/1978 (# Not Appl.)	Not Appl.	None	Total Acres 240Kv Pwr. Ln.	Not Available 37 Miles	ALL	Not Available	37 Miles	None	None	**DEVELOPMENT HAS BEEN COMPLETED**
55	877-009	USF Mass Seating Facility	Tampa Not Appl.	7/12/1977 (# Not Appl.)	Not Appl.	**EXPIRED** (1/12/1979)	Total Acres Arena (Seats)	42 11,000	ALL	Not Applicable	11,000	None	Not Applicable	**DEVELOPMENT ORDER HAS EXPIRED**
56	878-003	Forest Lake	Oldsmar	**SEE DRI #111**			Not Applicable					Not Applicable	Not Applicable	Not Applicable

DRI #	DCA ADA #	PROJECT NAME	LOCAL GOV'T/ A.R. LAST SUBMITTED	DATES			DEVELOPMENT PARAMETERS[1]					DEVELOPMENT ORDER AMENDMENT(S) (DATE, RESOL. #)[3]	NOTES[2]	INCONSISTENT WITH D.O. CONDITION #[4]
				D.O. ADOPT. (D.O. #)/ EFFECTIVE	A.R./B.R. DUE DATE	BUILDOUT/ EXPIRATION	LAND USE/ MEASURE	TOTAL APPROVED AMOUNT	SPECIFIC APPROVED AMOUNT	DURING RPT. YR.	CUMUL. DEV'T[43]			
157 / PA	887-024	Trinity Communities/ Pasco	Pasco 12/20/17 (for '15-'17)	(R. 90-56) 12/19/1989 12/05/1989 (R. 89-511) 12/28/1989	12/28B (Odd)	5/03/24[93/95/98/99] 5/03/30[93/95/98/99]	Total Acres Residential/SF (#) Residential/MF (#) Mobile Homes (#) Comm.Pk./Office Comm.Pk/Indust. Comm.Pk,/Mix Retail (GSF) Med. Office (GSF) Nghd. Ctr. (GSF) Office (GSF) Hospital (Beds) Life Care (Units)	3,206 5,253[107] 3,231[107] 1,235 536,556 160,144 717,800 1,101,548 321,680 60,000 43,000 240 840	 4,152[107] 1,008[107] 0 536,556 160,144 0 291,948 321,680 0 0 240 840	 0 348 0 0 0 0 0 0 0 0 0 0	 3,758 708 0 261,086 0 0 222,750 71,628 0 0 0 240	Many[44]	None	RYs 2015-17 - None
157 / PI	887-024	Trinity Communities/ Pinellas	Pinellas 12/23/09	(R. 90-56) 12/19/1989 12/05/1989 (R. 89-511) 12/28/1989	Not Appl.	**RESCINDED** (4/26/2011) R. 11-31	Total Acres Residential/SF (#)	260 130	130	0	83	Many[44]	None	**DEVELOPMENT ORDER WAS RESCINDED**
158	885-023	Tampa Bay Park of Commerce S/D	Oldsmar/ Pinellas 6/26/17	1/26/1988 (R. 88-42) 7/14/1987	7/14	5/18/19[59/90/93/95/97] 3/20/20[59/90/93/95/97]	Total Acres Industrial (GSF) Office (GSF) Retail (GSF) Residential (#)	1,200 779,227[130] 792,000[130] 39,362[130] 0	ALL	0 0 0 0	696,982 580,662 0 0	12/06/94, R.94-298 8/08/96, R. 96-16 2/18/97, R. 97-05 6/22/99, R. 99-115 7/05/05,R. 05-20(City) 7/12/05, R.05-142 (Cnty)	12/13/94, -170 Acres to SWFWMD	RY 2016-17 - None ("Letter in Lieu")
159	887-036	Eastshore Commerce Park	Hills. 11/28/98	9/27/1988 (R. 88-0255) 9/27/1988	Not Appl.	**RESCINDED** (10/11/2011) R. 11-116	Total Acres Industrial (GSF) Office (GSF) Retail (GSF)	434 4,417,200 832,600 108,900	1,689,160 735,040 57,400	0 0 0	0 0 0	1/23/90, R.90-0026 9/08/92, R.92-0218 4/08/97, R97-104 10/11/11, R. 11-116	None	**DEVELOPMENT ORDER WAS RESCINDED**
160	887-039	North Palms Village	Tampa 3/06/02 (for 2000-01)	1/05/1989 (O. 89-10) 1/05/1989	Not Appl. (7/01)	**EXPIRED** (2/14/2007)	Total Acres Office (GSF) Retail (GSF) Hotel (Rooms) Residential/MF (#)	124 315,390 557,037 450 684	ALL	0 7,000 0 0	0 342,813 200 138	3/22/90, O. 90-86 12/20/94, O.94-279 8/29/96, O. 96-179 1/30/97, O. 97-17 3/28/98, O.98-117	None	**DEVELOPMENT ORDER HAS EXPIRED. RY 2000-01 - MAJOR:** Bus Shelter & TSM Plan not Provided.
161	890-024	University Center Research. & Dev't Park	Tampa 3/14/19	1/14/1990 (O. 90-19) 1/25/1990	1/14	7/18/26[59/93/98/99/136] 7/18/31[59/93/98/99/136]	Total Acres R&D (GSF) Hotel (Rooms)	84 1,205,000 350	ALL	0 0	402,805 240	9/15/94, O. 94-176 6/09/05, O. 162 3/23/06, O.2006-73	None	RY 2018-19 - None ("Letter in Lieu")

Projections of Florida Population by County, 2025–2050, with Estimates for 2021 (continued)

County and State	Estimates April 1, 2021	Projections, April 1 2025	2030	2035	2040	2045	2050
DUVAL	1,016,809						
Low		1,012,300	1,022,600	1,018,800	1,007,700	993,400	977,800
Medium		1,076,900	1,136,200	1,181,200	1,217,800	1,249,500	1,278,100
High		1,141,600	1,249,800	1,343,700	1,427,800	1,505,700	1,578,500
ESCAMBIA	324,458						
Low		317,200	313,300	308,300	302,900	297,500	292,400
Medium		333,900	342,400	349,300	355,400	360,700	365,500
High		350,600	371,500	390,400	407,800	423,800	438,600
FLAGLER	119,662						
Low		122,800	128,800	131,800	132,700	132,300	131,500
Medium		132,000	145,600	156,400	165,400	173,000	180,100
High		141,300	162,300	181,100	198,000	213,600	228,700
FRANKLIN	12,364						
Low		12,000	11,900	11,600	11,200	10,800	10,400
Medium		13,000	13,600	14,100	14,400	14,700	15,000
High		14,100	15,400	16,600	17,600	18,600	19,500
GADSDEN	43,813						
Low		41,900	40,500	39,100	37,900	36,700	35,600
Medium		44,100	44,300	44,400	44,400	44,500	44,500
High		46,300	48,100	49,600	51,000	52,200	53,400
GILCHRIST	18,126						
Low		17,700	17,500	17,200	16,800	16,300	15,900
Medium		19,000	19,800	20,400	20,900	21,300	21,700
High		20,400	22,100	23,600	25,000	26,300	27,600
GLADES	12,130						
Low		11,700	11,400	11,100	10,700	10,400	10,100
Medium		12,500	12,700	12,900	13,000	13,100	13,200
High		13,200	14,000	14,600	15,200	15,800	16,200
GULF	14,824						
Low		14,500	14,300	13,900	13,600	13,200	12,900
Medium		15,500	15,900	16,200	16,400	16,700	16,900
High		16,400	17,500	18,400	19,300	20,100	20,800
HAMILTON	13,226						
Low		12,800	12,400	12,000	11,500	11,100	10,800
Medium		13,700	13,800	13,900	14,000	14,000	14,100
High		14,500	15,200	15,800	16,400	16,900	17,400
HARDEE	25,269						
Low		23,800	22,700	21,600	20,600	19,600	18,800
Medium		25,300	25,200	25,000	24,900	24,700	24,600
High		26,800	27,700	28,400	29,100	29,800	30,400
HENDRY	40,540						
Low		39,900	39,700	39,200	38,600	37,900	37,300
Medium		42,000	43,400	44,500	45,300	46,000	46,600
High		44,100	47,100	49,700	52,000	54,000	55,900
HERNANDO	196,540						
Low		195,100	197,100	196,900	195,200	192,600	189,700
Medium		207,600	219,000	228,300	235,900	242,300	248,000
High		220,000	240,900	259,600	276,600	292,000	306,300
HIGHLANDS	102,065						
Low		99,000	97,400	95,600	93,600	91,700	89,900
Medium		104,200	106,500	108,300	109,800	111,100	112,300
High		109,500	115,500	121,000	126,000	130,600	134,800
HILLSBOROUGH	1,490,374						
Low		1,499,300	1,531,800	1,541,000	1,537,400	1,526,200	1,511,700
Medium		1,595,000	1,702,000	1,786,700	1,857,800	1,919,800	1,976,100
High		1,690,800	1,872,200	2,032,300	2,178,300	2,313,300	2,440,500

Appendix E

Forecasted 2045 AADT

Table 1. Forecasted 2045 AADTS Following NCHRP Report 765 Ratio & Difference Smoothing Method Based on 2022 Calibrated AADTs_ Along Fowler Avenue

TBRPM A Node	TBRPM B Node	Location	2022 AADT	MOCF [1]	2015 AADT	2045 AADT	2022 TBRPM Interpolated AADT	2045 Smoothed Ratio AADT	2045 Smoothed Difference AADT	2045 Smoothed Average AADT	2015-2045 TBRPM AGR	Ratio (2022 AADT/2022 Interpolated)	Selected Method	Recommended 2045 AADT	Link AGR [2]
7787	7797	W. Country Club Drive west of Florida Avenue	5,800	0.95	5779	7253	6,123	6,871	6,930	6,900	0.9%	0.9	Smoothed Average	6,900	0.8%
7805	7809	Between Florida Avenue and I-275 Southbound Ramps	20,000	0.95	22177	36604	25,543	28,661	31,061	29,861	2.2%	0.8	Smoothed Average	30,000	2.2%
7815	7820	Between I-275 Northbound Ramps and Nebraska Avenue	50,000	0.95	45551	54873	47,726	57,487	57,147	57,317	0.7%	1.0	Smoothed Average	57,500	0.7%
7827	7834	East of Nebraska Avenue	57,500	0.95	47787	51619	48,681	60,970	60,438	60,704	0.3%	1.2	Smoothed Average	60,500	0.2%
7842	7850	West of 15th Street	56,000	0.95	49426	54662	50,648	60,438	60,014	60,226	0.4%	1.1	Smoothed Average	60,000	0.3%
7850	9693	East of 15th Street	55,000	0.95	50316	55802	51,596	59,483	59,206	59,345	0.4%	1.1	Smoothed Average	59,500	0.4%
9693	7872	West of 22nd Street	52,000	0.95	50522	55981	51,796	56,202	56,185	56,193	0.4%	1.0	Smoothed Average	56,000	0.3%
7872	7882	East of 22nd Street	52,000	0.95	51277	56369	52,465	55,869	55,904	55,887	0.3%	1.0	Smoothed Average	56,000	0.3%
7872	7882	West of University Collections main entrance	51,000	0.95	51277	56369	52,465	54,795	54,904	54,849	0.3%	1.0	Smoothed Average	55,000	0.3%
7882	7898	West of Bruce B. Downs Boulevard	56,000	0.95	46823	50324	47,640	59,155	58,684	58,919	0.2%	1.2	Smoothed Average	59,000	0.2%
7898	7924	East of Bruce B. Downs Boulevard	60,000	0.95	39789	44645	40,922	65,458	63,723	64,590	0.4%	1.5	Smoothed Average	64,500	0.3%
7924	7930	East of Spectrum Boulevard/McKinley Drive	54,500	0.95	49669	56150	51,181	59,791	59,469	59,630	0.4%	1.1	Smoothed Average	59,500	0.4%
7930	7938	Between LeRoy Collins Boulevard and 46th Street	60,500	0.95	45953	51820	47,322	66,251	64,998	65,625	0.4%	1.3	Smoothed Average	65,500	0.4%
7962	7975	Between USF Bull Run Drive/MOSI driveway and 50th Street	61,500	0.95	56542	62526	57,938	66,370	66,088	66,229	0.4%	1.1	Smoothed Average	66,000	0.3%
7975	7993	East of 50th Street	62,000	0.95	52381	59654	54,078	68,393	67,576	67,985	0.5%	1.1	Smoothed Average	68,000	0.4%
7993	8001	West of 56th Street	59,000	0.95	48899	56543	50,682	65,822	64,861	65,341	0.5%	1.2	Smoothed Average	65,500	0.5%
8001	8026	East of 56th Street	54,500	0.95	44551	52751	46,464	61,874	60,787	61,331	0.6%	1.2	Smoothed Average	61,500	0.6%

1. Model Output Conversion Factor
2. Annual Growth Rate

Table 2. Forecasted 2045 AADTS Following NCHRP Report 765 Ratio & Difference Smoothing Method Based on 2022 Calibrated AADTs_ Cross Streets

TBRPM A Node	TBRPM B Node	Location	2022 AADT	MOCF	2015 AADT	2045 AADT	2022 TBRPM Interpolated AADT	2045 Smoothed Ratio AADT	2045 Smoothed Difference AADT	2045 Smoothed Average AADT	2015-2045 TBRPM AGR	Ratio (2022 AADT/2022 Interpolated)	TAZ AGR [1]	Selected Method	Recommended 2045 AADT	Link AGR
7797	7836	Florida Avenue north of Fowler Avenue	23,500	0.95	25035	37100	27,850	31,305	32,750	32,027	1.6%	0.8		Smoothed Average	32,000	1.6%
7755	7797	Florida Avenue south of Fowler Avenue	23,500	0.95	21434	35437	24,702	33,713	34,235	33,974	2.2%	1.0		Smoothed Average	34,000	1.9%
7809	7845	I-275 SB Off-Ramp north of Fowler Avenue	8,100	0.98	3296	4940	3,680	10,875	9,361	10,118	1.7%	2.2		Smoothed Difference	9,400	0.7%
7779	7809	I-275 SB On-Ramp south of Fowler Avenue	18,500	0.98	15764	17811	16,241	20,288	20,070	20,179	0.4%	1.1		Smoothed Average	20,000	0.4%
7815	7847	I-275 NB On-Ramp north of Fowler Avenue	7,000	0.98	3851	5764	4,297	9,390	8,467	8,929	1.7%	1.6		Smoothed Average	8,900	1.2%
7763	7815	I-275 NB Off-Ramp south of Fowler Avenue	16,000	0.98	15375	17022	15,760	17,282	17,263	17,272	0.4%	1.0		Smoothed Average	17,500	0.4%
7827	9692	Nebraska Avenue north of Fowler Avenue	26,500	0.95	19714	34716	23,215	39,629	38,002	38,815	2.5%	1.1		Smoothed Average	39,000	2.1%
7774	7827	Nebraska Avenue south of Fowler Avenue	22,000	0.95	21043	31207	23,415	29,321	29,792	29,556	1.6%	0.9		Smoothed Average	29,500	1.5%
7850	9694	15th Street north of Fowler Avenue	8,400	0.95	4760	7015	5,286	11,147	10,129	10,638	1.6%	1.6		Smoothed Average	10,500	1.1%
9047	7850	15th Street south of Fowler Avenue	8,300	0.95	4305	7974	5,161	12,824	11,113	11,969	2.8%	1.6		Smoothed Average	12,000	1.9%
306		19th Street north of Fowler Avenue	4,100	0.95	4603	9097					3.3%		3.3%	TAZ Growth	7,200	3.3%
9046	7872	22nd Street south of Fowler Avenue	8,400	0.95	5752	8665	6,431	11,317	10,633	10,975	1.7%	1.3		Smoothed Average	11,000	1.3%
307		Club Drive north of Fowler Avenue	3,300	0.95	14829	21712					1.5%		1.5%	TAZ Growth	4,500	1.6%
7898	7920	Bruce B Downs Boulevard north of Fowler Avenue	45,000	0.95	62818	70014	64,497	48,849	50,517	49,683	0.4%	0.7		Smoothed Average	49,500	0.4%
7865	7898	30th Street south of Fowler Avenue	31,000	0.95	28016	35570	29,779	37,028	36,791	36,910	0.9%	1.0		Smoothed Average	37,000	0.8%
7924	9002	Spectrum Boulevard north of Fowler Avenue	3,100	0.95	5635	11933	7,105	5,207	7,929	6,568	3.7%	0.4		Smoothed Ratio	5,200	2.9%
7899	7924	McKinley Drive south of Fowler Avenue	20,000	0.95	17694	28644	20,249	28,292	28,395	28,343	2.1%	1.0		Smoothed Average	28,500	1.8%
7930	7964	LeRoy Collins Boulevard north of Fowler Avenue	10,000	0.95	27167	30197	27,874	10,833	12,323	11,578	0.4%	0.4		Smoothed Ratio	11,000	0.4%
7962	7983	USF Bull Run Drive north of Fowler Avenue	4,600	0.95	16296	21775	17,575	5,700	8,801	7,250	1.1%	0.3		Smoothed Ratio	5,700	1.0%
185		MOSI driveway south of Fowler Avenue	250	0.95	9055	9242					0.1%		0.1%	TAZ Growth	250	0.0%
7975	8023	50th Street north of Fowler Avenue	9,400	0.95	4861	7368	5,446	12,718	11,322	12,020	1.7%	1.7		Smoothed Average	12,000	1.2%
185		50th Street south of Fowler Avenue	6,200	0.95	9055	9242					0.1%		0.1%	TAZ Growth	6,300	0.1%
8001	8039	56th Street north of Fowler Avenue	28,500	0.95	27674	37626	29,996	35,749	36,130	35,939	1.2%	1.0		Smoothed Average	36,000	1.1%
7965	8001	56th Street south of Fowler Avenue	31,000	0.95	32494	36797	33,498	34,053	34,299	34,176	0.4%	0.9		Smoothed Average	34,000	0.4%
307		University Town Center west entrance	2,300	0.95	14829	21712					1.5%		1.5%	TAZ Growth	3,100	1.5%
307		University Town Center main entrance	4,700	0.95	14829	21712					1.5%		1.5%	TAZ Growth	6,400	1.6%
307		University Town Center east entrance	2,300	0.95	14829	21712					1.5%		1.5%	TAZ Growth	3,100	1.5%
310	7882	University Collections main entrance north of Fowler Avenue	6,700	0.95	3603	4236					0.6%		0.6%	TAZ Connector Growth	7,600	0.6%

1. Annual Growth Rate (AGR) for the missing links in the TBRPM was assumed from TAZ or TAZ centroid connectors which ever seems more reasonable, and were not subject to NCHRP method.

Appendix F

ITE Trip Generation Calculations

Off-Campus Student Apartment (Low-Rise)

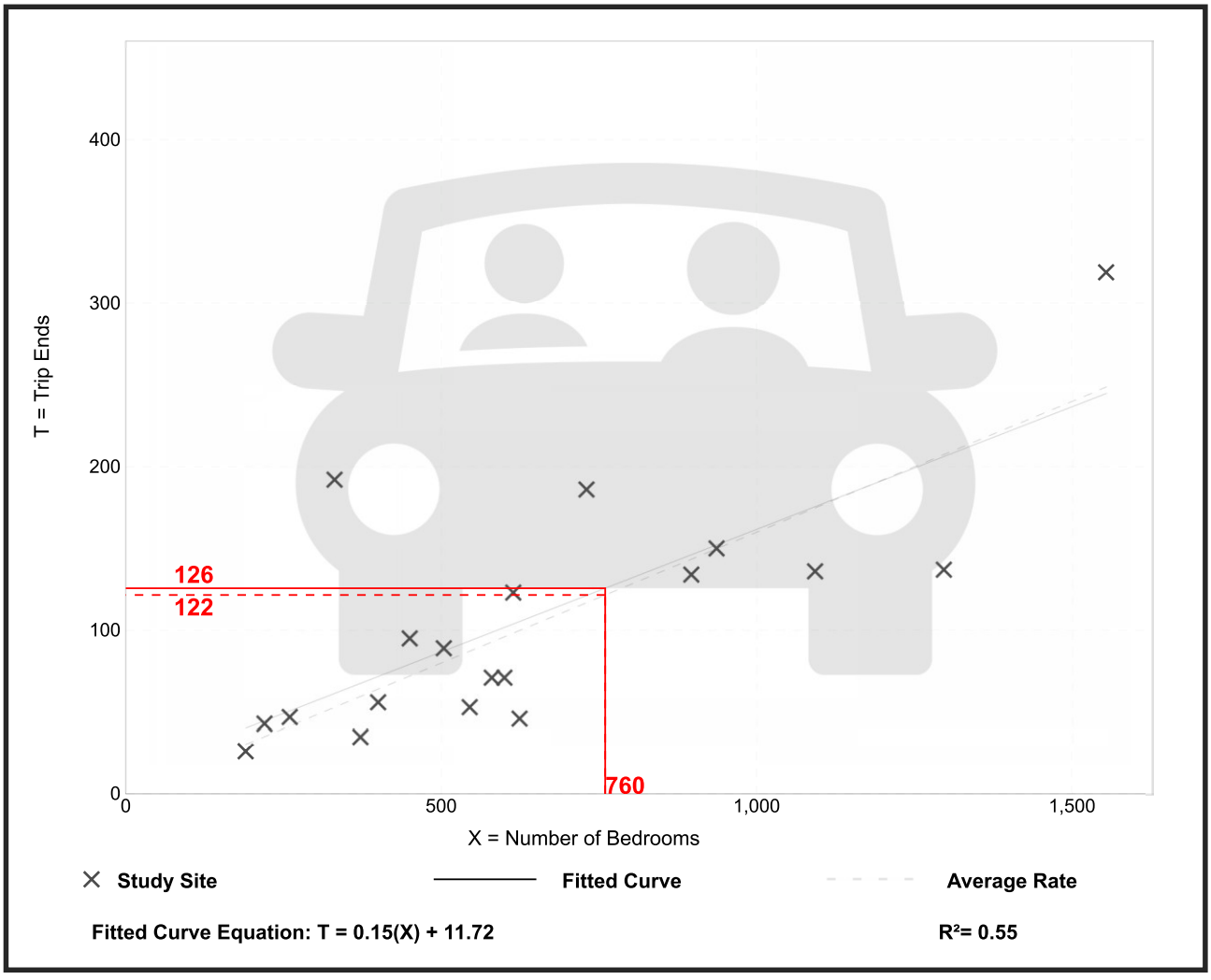
Over 1/2 Mile from Campus (225)

Vehicle Trip Ends vs:	**Bedrooms**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	19
Avg. Num. of Bedrooms:	642
Directional Distribution:	27% entering, 73% exiting

Vehicle Trip Generation per Bedroom

Average Rate	Range of Rates	Standard Deviation
0.16	0.07 - 0.58	0.09

Data Plot and Equation



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Off-Campus Student Apartment (Low-Rise)

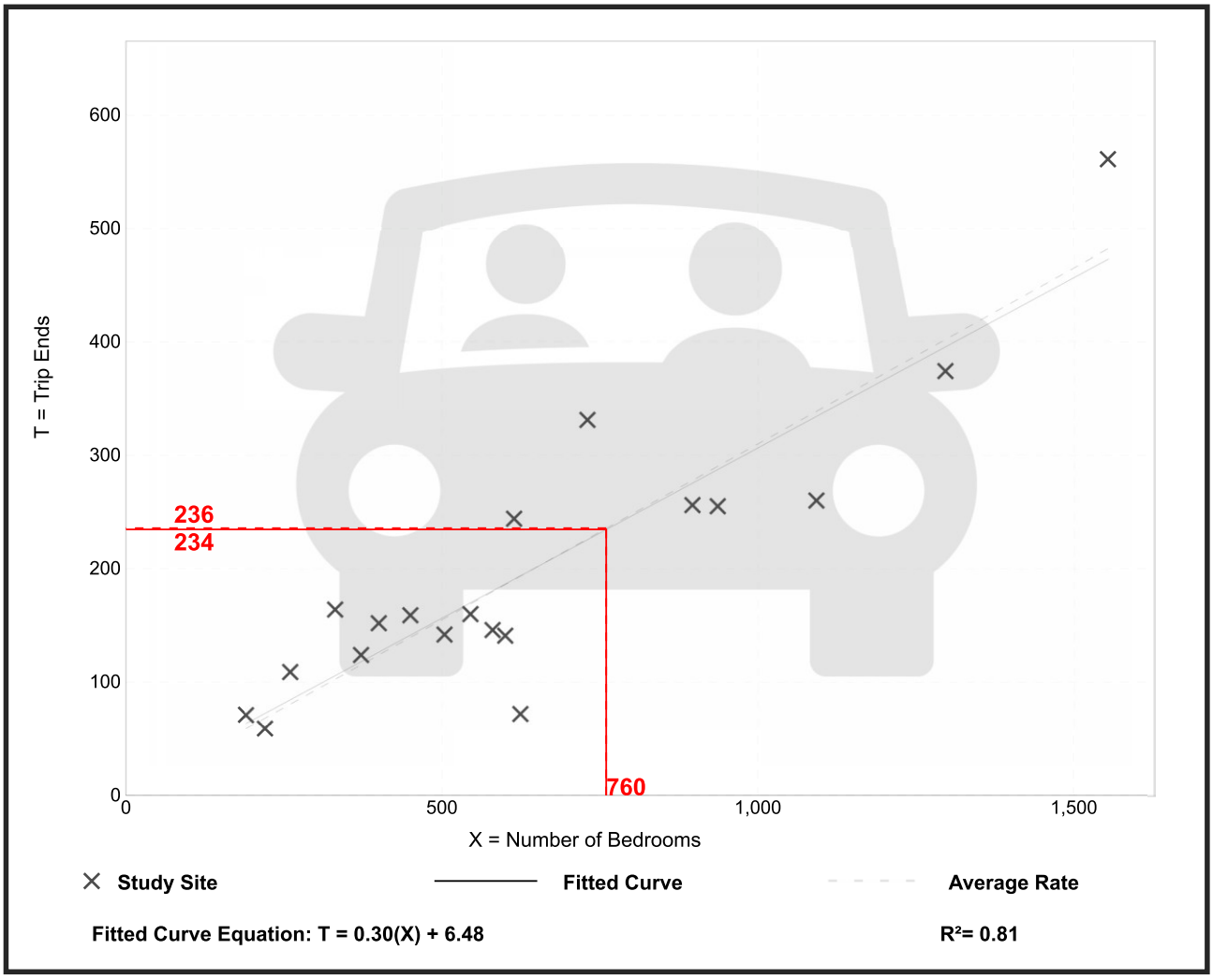
Over 1/2 Mile from Campus (225)

Vehicle Trip Ends vs: **Bedrooms**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 19
Avg. Num. of Bedrooms: 642
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Bedroom

Average Rate	Range of Rates	Standard Deviation
0.31	0.12 - 0.50	0.08

Data Plot and Equation



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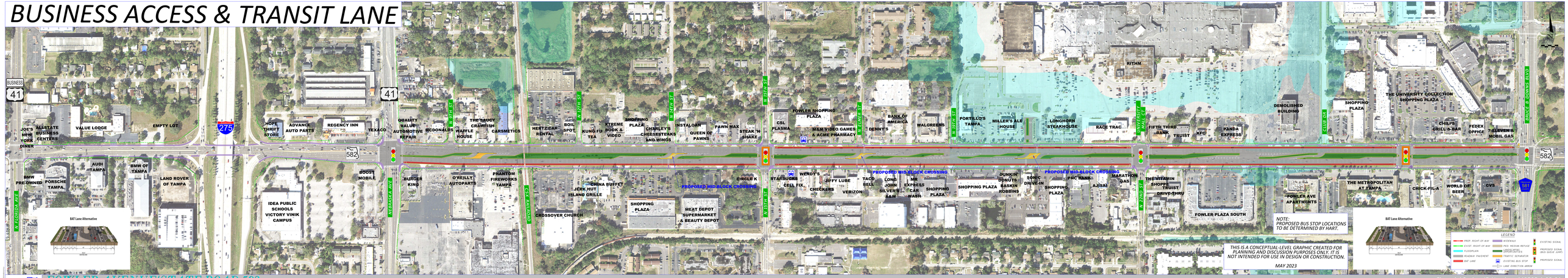
Appendix G

Concept Plans

BUSINESS ACCESS & TRANSIT LANE



FDOT

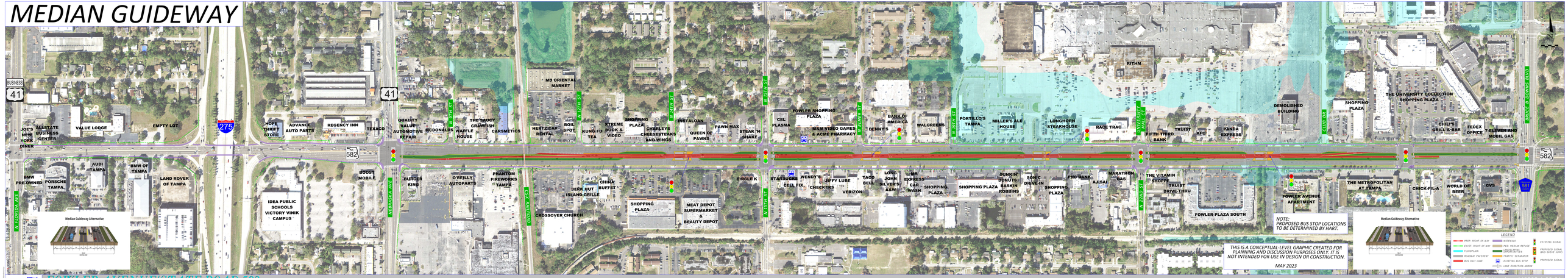
FOWLER AVENUE/STATE ROAD 582

from N. Florida Avenue to east of Bruce B. Downs Blvd. (WPI Segment No. 448505-1)

Financial Project ID Number 448505-1-22-01

Project Development and Environment (PD&E) Study

MEDIAN GUIDEWAY



NOTE:
PROPOSED BUS STOP LOCATIONS TO BE DETERMINED BY HART.

THIS IS A CONCEPTUAL-LEVEL GRAPHIC CREATED FOR PLANNING AND DISCUSSION PURPOSES ONLY. IT IS NOT INTENDED FOR USE IN DESIGN OR CONSTRUCTION.

MAY 2023

FDOT

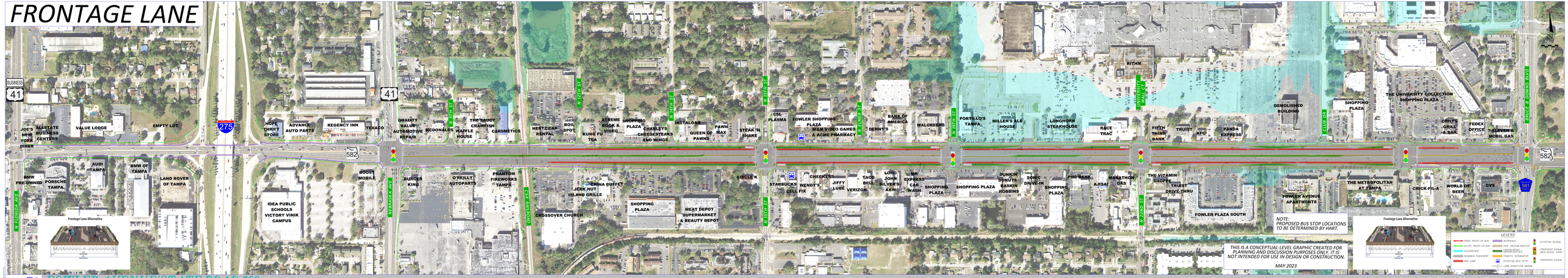
FOWLER AVENUE/STATE ROAD 582

from N. Florida Avenue to east of Bruce B. Downs Blvd. (WPI Segment No. 448505-1)

Financial Project ID Number 448505-1-22-01

Project Development and Environment (PD&E) Study

FRONTAGE LANE



FDOT

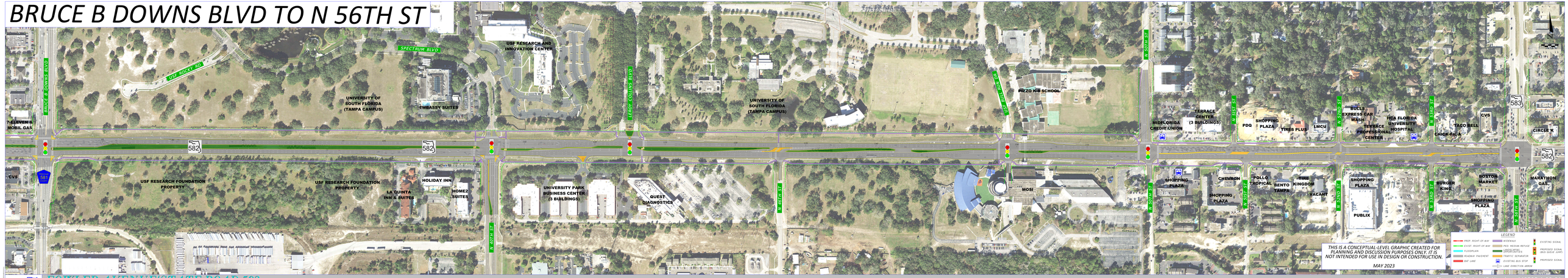
FOWLER AVENUE/STATE ROAD 582

from N. Florida Avenue to east of Bruce B. Downs Blvd. (WPI Segment No. 448505-1)

Financial Project ID Number 448505-1-22-01

Project Development and Environment (PD&E) Study

BRUCE B DOWNS BLVD TO N 56TH ST



FDOT

FOWLER AVENUE/STATE ROAD 582

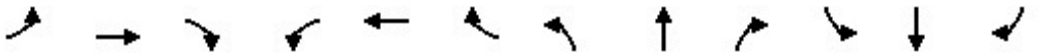
from east of Bruce B. Downs Blvd. to west of N. 56th Street (WPI Segment No. 448505-1)

Financial Project ID Number 448505-1-22-01

Project Development and Environment (PD&E) Study

Appendix H

Synchro Outputs



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	240	25	445	195	320	10	575	330	230	850	40
Future Volume (veh/h)	25	240	25	445	195	320	10	575	330	230	850	40
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	26	253	26	468	205	337	11	605	347	242	895	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	184	297	30	532	266	225	20	1893	844	282	2085	98
Arrive On Green	0.10	0.09	0.09	0.05	0.05	0.05	0.01	0.54	0.54	0.08	0.61	0.61
Sat Flow, veh/h	1767	3230	329	3428	1856	1572	1767	3526	1572	3428	3428	161
Grp Volume(v), veh/h	26	137	142	468	205	337	11	605	347	242	460	477
Grp Sat Flow(s),veh/h/ln	1767	1763	1796	1714	1856	1572	1767	1763	1572	1714	1763	1827
Q Serve(g_s), s	2.9	16.8	17.1	29.8	24.0	26.1	1.4	21.1	28.8	15.3	30.5	30.5
Cycle Q Clear(g_c), s	2.9	16.8	17.1	29.8	24.0	26.1	1.4	21.1	28.8	15.3	30.5	30.5
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	184	162	165	532	266	225	20	1893	844	282	1072	1111
V/C Ratio(X)	0.14	0.84	0.86	0.88	0.77	1.50	0.56	0.32	0.41	0.86	0.43	0.43
Avail Cap(c_a), veh/h	184	356	363	737	585	496	144	1893	844	591	1072	1111
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	0.68	0.68	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	89.6	98.3	98.5	102.3	101.2	71.5	108.2	28.5	30.3	99.7	22.9	22.9
Incr Delay (d2), s/veh	0.1	11.2	12.0	7.3	4.6	231.5	8.9	0.4	1.5	7.5	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.3	8.7	14.5	12.5	25.7	0.7	9.1	11.6	7.1	13.1	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.7	109.6	110.5	109.7	105.8	303.1	117.2	28.9	31.7	107.2	24.1	24.1
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	C	C
Approach Vol, veh/h		305			1010			963			1179	
Approach Delay, s/veh		108.3			173.4			30.9			41.2	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.5	140.7	30.7	39.1	25.2	125.0	41.8	27.9
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 18	81.1	* 22	* 69	* 38	61.1	* 47	* 44
Max Q Clear Time (g_c+I1), s	3.4	32.5	4.9	28.1	17.3	30.8	31.8	19.1
Green Ext Time (p_c), s	0.0	2.9	0.0	3.4	0.7	3.4	2.3	1.1

Intersection Summary	
HCM 6th Ctrl Delay	82.9
HCM 6th LOS	F

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)	185	2255	100	310	1605	360	160	470	285	460	740	195
Future Volume (veh/h)	185	2255	100	310	1605	360	160	470	285	460	740	195
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	195	2374	105	326	1689	379	168	495	300	484	779	205
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	228	2437	108	593	2495	1010	200	541	513	513	862	489
Arrive On Green	0.02	0.13	0.13	0.23	0.65	0.65	0.06	0.15	0.15	0.15	0.24	0.24
Sat Flow, veh/h	3428	6314	279	3428	5066	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	195	1799	680	326	1689	379	168	495	300	484	779	205
Grp Sat Flow(s),veh/h/ln	1714	1596	1805	1714	1689	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	12.5	82.4	82.6	18.4	45.5	19.0	10.7	30.4	9.7	30.8	47.1	22.7
Cycle Q Clear(g_c), s	12.5	82.4	82.6	18.4	45.5	19.0	10.7	30.4	9.7	30.8	47.1	22.7
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	228	1847	697	593	2495	1010	200	541	513	513	862	489
V/C Ratio(X)	0.86	0.97	0.98	0.55	0.68	0.38	0.84	0.92	0.58	0.94	0.90	0.42
Avail Cap(c_a), veh/h	295	1847	697	593	2495	1010	341	864	657	528	1056	575
HCM Platoon Ratio	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.55	0.55	0.55	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	106.5	94.9	95.0	77.2	27.1	11.9	102.6	91.7	28.5	92.6	80.6	60.1
Incr Delay (d2), s/veh	8.7	10.5	20.1	0.6	1.5	1.1	3.6	6.6	0.4	25.1	8.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	37.5	44.4	7.9	16.9	5.9	4.9	14.4	8.2	15.4	22.3	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.2	105.4	115.1	77.8	28.6	13.0	106.1	98.3	28.9	117.7	89.0	60.3
LnGrp LOS	F	F	F	E	C	B	F	F	C	F	F	E
Approach Vol, veh/h		2674			2394			963			1468	
Approach Delay, s/veh		108.6			32.8			78.0			94.5	
Approach LOS		F			C			E			F	

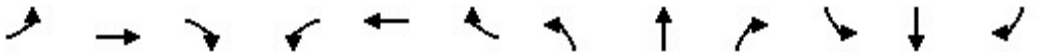
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	115.4	41.0	41.8	45.1	92.0	21.0	61.9
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 19	* 83	* 34	* 54	* 17	* 85	* 22	* 66
Max Q Clear Time (g_c+I1), s	14.5	47.5	32.8	32.4	20.4	84.6	12.7	49.1
Green Ext Time (p_c), s	0.1	14.0	0.2	1.3	0.0	0.3	0.2	1.7

Intersection Summary	
HCM 6th Ctrl Delay	77.7
HCM 6th LOS	E

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)	50	2715	85	115	1965	120	155	140	65	160	210	60
Future Volume (veh/h)	50	2715	85	115	1965	120	155	140	65	160	210	60
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	53	2858	89	121	2068	126	163	147	68	168	221	63
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	302	3401	105	137	2710	165	196	200	93	246	236	67
Arrive On Green	0.34	1.00	1.00	0.03	0.14	0.14	0.08	0.17	0.17	0.09	0.17	0.17
Sat Flow, veh/h	1767	6408	199	1767	6197	377	1767	1200	555	1767	1388	396
Grp Volume(v), veh/h	53	2132	815	121	1597	597	163	0	215	168	0	284
Grp Sat Flow(s),veh/h/ln	1767	1596	1820	1767	1596	1788	1767	0	1756	1767	0	1784
Q Serve(g_s), s	4.6	0.0	0.0	15.0	70.6	70.6	16.7	0.0	25.6	17.2	0.0	34.6
Cycle Q Clear(g_c), s	4.6	0.0	0.0	15.0	70.6	70.6	16.7	0.0	25.6	17.2	0.0	34.6
Prop In Lane	1.00		0.11	1.00		0.21	1.00		0.32	1.00		0.22
Lane Grp Cap(c), veh/h	302	2541	966	137	2093	782	196	0	293	246	0	303
V/C Ratio(X)	0.18	0.84	0.84	0.88	0.76	0.76	0.83	0.00	0.73	0.68	0.00	0.94
Avail Cap(c_a), veh/h	302	2541	966	146	2093	782	197	0	397	298	0	460
HCM Platoon Ratio	2.00	2.00	2.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.6	0.0	0.0	106.2	83.2	83.2	70.4	0.0	87.0	69.3	0.0	90.2
Incr Delay (d2), s/veh	0.1	3.5	8.9	39.3	2.7	7.0	23.4	0.0	4.6	3.0	0.0	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.8	2.4	8.7	31.1	35.8	8.9	0.0	12.1	8.1	0.0	17.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	3.5	8.9	145.5	85.9	90.2	93.8	0.0	91.7	72.3	0.0	110.7
LnGrp LOS	E	A	A	F	F	F	F	A	F	E	A	F
Approach Vol, veh/h		3000			2315			378			452	
Approach Delay, s/veh		6.0			90.1			92.6			96.4	
Approach LOS		A			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.4	103.0	27.6	45.0	23.8	123.6	27.0	45.7
Change Period (Y+Rc), s	6.8	6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	18.2	96.2	25.7	49.7	18.2	96.2	18.7	56.7
Max Q Clear Time (g_c+I1), s	6.6	72.6	19.2	27.6	17.0	2.0	18.7	36.6
Green Ext Time (p_c), s	0.0	12.8	0.1	0.6	0.0	38.9	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	2500	115	60	2075	35	130	150	150	75	125	5
Future Volume (veh/h)	35	2500	115	60	2075	35	130	150	150	75	125	5
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	37	2632	121	63	2184	37	137	158	158	79	132	5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	161	3870	177	272	4520	77	183	329	293	134	331	13
Arrive On Green	0.04	1.00	1.00	0.10	0.69	0.69	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1767	6302	289	1767	6513	110	1242	1763	1572	1055	1776	67
Grp Volume(v), veh/h	37	1997	756	63	1605	616	137	158	158	79	0	137
Grp Sat Flow(s),veh/h/ln	1767	1596	1804	1767	1596	1836	1242	1763	1572	1055	0	1843
Q Serve(g_s), s	1.3	0.0	0.0	0.0	34.0	34.0	24.0	17.6	20.0	16.1	0.0	14.4
Cycle Q Clear(g_c), s	1.3	0.0	0.0	0.0	34.0	34.0	38.3	17.6	20.0	36.1	0.0	14.4
Prop In Lane	1.00		0.16	1.00		0.06	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	161	2940	1108	272	3323	1274	183	329	293	134	0	344
V/C Ratio(X)	0.23	0.68	0.68	0.23	0.48	0.48	0.75	0.48	0.54	0.59	0.00	0.40
Avail Cap(c_a), veh/h	271	2940	1108	272	3323	1274	206	361	322	153	0	377
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	0.0	0.0	23.8	15.5	15.5	95.5	80.0	80.9	97.3	0.0	78.6
Incr Delay (d2), s/veh	0.3	1.3	3.4	0.2	0.5	1.3	12.5	1.1	1.5	4.6	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.3	1.1	2.3	12.4	14.5	8.5	8.2	8.3	4.7	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.5	1.3	3.4	24.0	16.0	16.8	108.0	81.1	82.5	101.9	0.0	79.4
LnGrp LOS	B	A	A	C	B	B	F	F	F	F	A	E
Approach Vol, veh/h		2790			2284			453			216	
Approach Delay, s/veh		2.0			16.4			89.7			87.6	
Approach LOS		A			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	159.6		49.0	29.0	142.0		49.0				
Change Period (Y+Rc), s	6.9	6.9		* 8	6.9	6.9		* 8				
Max Green Setting (Gmax), s	18.1	135.1		* 45	18.1	135.1		* 45				
Max Q Clear Time (g_c+I1), s	3.3	36.0		40.3	2.0	2.0		38.1				
Green Ext Time (p_c), s	0.0	19.4		0.7	0.0	34.7		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	17.9
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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	2740	0	0	1900	200	0	0	0	130	0	160
Future Volume (veh/h)	115	2740	0	0	1900	200	0	0	0	130	0	160
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	121	2884	0	0	2000	211	0	0	0	137	0	168
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	209	5183	0	92	4463	470	0	1	1	210	0	187
Arrive On Green	0.03	0.81	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.12	0.00	0.12
Sat Flow, veh/h	1767	6643	0	1767	5908	623	0	1856	1572	1767	0	1572
Grp Volume(v), veh/h	121	2884	0	0	1620	591	0	0	0	137	0	168
Grp Sat Flow(s),veh/h/ln	1767	1596	0	1767	1596	1743	0	1856	1572	1767	0	1572
Q Serve(g_s), s	3.5	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	23.2
Cycle Q Clear(g_c), s	3.5	34.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	23.2
Prop In Lane	1.00		0.00	1.00		0.36	0.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	209	5183	0	92	3616	1317	0	1	1	210	0	187
V/C Ratio(X)	0.58	0.56	0.00	0.00	0.45	0.45	0.00	0.00	0.00	0.65	0.00	0.90
Avail Cap(c_a), veh/h	310	5183	0	237	3616	1317	0	123	104	423	0	376
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.7	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.6	0.0	95.6
Incr Delay (d2), s/veh	0.9	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	3.4	0.0	14.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	7.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	96.0	0.0	109.6
LnGrp LOS	A	A	A	A	A	A	A	A	A	F	A	F
Approach Vol, veh/h		3005			2211			0			305	
Approach Delay, s/veh		7.5			0.1			0.0			103.5	
Approach LOS		A			A						F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.4	173.0		0.0	0.0	185.4		34.6				
Change Period (Y+Rc), s	6.8	6.8		* 8.4	6.8	6.8		8.4				
Max Green Setting (Gmax), s	18.2	104.2		* 15	18.2	104.2		52.6				
Max Q Clear Time (g_c+I1), s	5.5	2.0		0.0	0.0	36.1		25.2				
Green Ext Time (p_c), s	0.1	19.6		0.0	0.0	39.8		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.8
HCM 6th LOS	A

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	620	1930	320	255	1550	745	245	780	260	610	935	300
Future Volume (veh/h)	620	1930	320	255	1550	745	245	780	260	610	935	300
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	653	2032	0	268	1632	0	258	821	0	642	984	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	685	2089		274	1482		256	881		677	1046	
Arrive On Green	0.40	0.82	0.00	0.08	0.29	0.00	0.07	0.17	0.00	0.20	0.30	0.00
Sat Flow, veh/h	3428	5066	1572	3428	5066	1572	3428	5066	1572	3428	3526	1572
Grp Volume(v), veh/h	653	2032	0	268	1632	0	258	821	0	642	984	0
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1689	1572	1714	1689	1572	1714	1763	1572
Q Serve(g_s), s	40.6	78.2	0.0	17.2	64.4	0.0	16.4	35.2	0.0	40.7	59.9	0.0
Cycle Q Clear(g_c), s	40.6	78.2	0.0	17.2	64.4	0.0	16.4	35.2	0.0	40.7	59.9	0.0
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	685	2089		274	1482		256	881		677	1046	
V/C Ratio(X)	0.95	0.97		0.98	1.10		1.01	0.93		0.95	0.94	
Avail Cap(c_a), veh/h	757	2089		274	1482		256	930		707	1112	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.00	0.58	0.58	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	65.0	18.2	0.0	101.0	77.8	0.0	101.8	89.6	0.0	87.2	75.5	0.0
Incr Delay (d2), s/veh	18.2	12.4	0.0	35.2	52.2	0.0	58.7	15.3	0.0	21.7	14.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.3	14.7	0.0	9.0	34.9	0.0	9.4	16.6	0.0	20.0	29.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	83.2	30.5	0.0	136.2	130.1	0.0	160.5	104.9	0.0	108.9	90.0	0.0
LnGrp LOS	F	C		F	F		F	F		F	F	
Approach Vol, veh/h		2685			1900			1079			1626	
Approach Delay, s/veh		43.3			130.9			118.2			97.5	
Approach LOS		D			F			F			F	

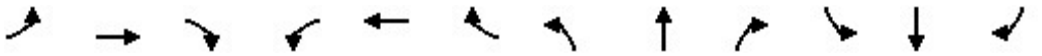
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.4	71.8	51.0	45.8	25.0	98.1	24.0	72.9
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	48.6	55.6	* 45	* 40	17.6	86.6	* 16	* 69
Max Q Clear Time (g_c+I1), s	42.6	66.4	42.7	37.2	19.2	80.2	18.4	61.9
Green Ext Time (p_c), s	1.3	0.0	0.7	1.1	0.0	4.9	0.0	2.4

Intersection Summary			
HCM 6th Ctrl Delay		89.3	
HCM 6th LOS		F	

Notes

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

Unsignalized Delay for [NBR, EBR, 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)	45	2090	665	535	2080	50	430	85	210	20	65	40
Future Volume (veh/h)	45	2090	665	535	2080	50	430	85	210	20	65	40
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	47	2200	0	563	2189	53	517	0	221	21	68	42
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	59	2031		844	3107	965	576	0	1287	81	85	72
Arrive On Green	0.03	0.40	0.00	0.25	0.61	0.61	0.16	0.00	0.16	0.05	0.05	0.05
Sat Flow, veh/h	1767	5066	1572	3428	5066	1572	3534	0	3145	1767	1856	1572
Grp Volume(v), veh/h	47	2200	0	563	2189	53	517	0	221	21	68	42
Grp Sat Flow(s),veh/h/ln	1767	1689	1572	1714	1689	1572	1767	0	1572	1767	1856	1572
Q Serve(g_s), s	5.8	88.2	0.0	32.6	64.7	3.0	31.5	0.0	0.0	2.5	8.0	5.8
Cycle Q Clear(g_c), s	5.8	88.2	0.0	32.6	64.7	3.0	31.5	0.0	0.0	2.5	8.0	5.8
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	59	2031		844	3107	965	576	0	1287	81	85	72
V/C Ratio(X)	0.79	1.08		0.67	0.70	0.05	0.90	0.00	0.17	0.26	0.80	0.58
Avail Cap(c_a), veh/h	98	2031		844	3107	965	747	0	1439	116	121	103
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)	0.17	0.17	0.00	0.42	0.42	0.42	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	105.6	65.9	0.0	74.8	28.9	17.0	90.3	0.0	41.3	101.3	103.9	102.9
Incr Delay (d2), s/veh	1.6	39.3	0.0	0.9	0.6	0.0	11.3	0.0	0.1	1.7	21.0	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	44.5	0.0	14.3	25.7	1.1	15.3	0.0	4.0	1.2	4.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	107.1	105.2	0.0	75.7	29.5	17.1	101.6	0.0	41.4	103.0	125.0	110.1
LnGrp LOS	F	F		E	C	B	F	A	D	F	F	F
Approach Vol, veh/h		2247			2805			738			131	
Approach Delay, s/veh		105.3			38.6			83.6			116.7	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.2	142.8		43.4	61.9	96.0		18.7				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 12	* 1.2E2		* 47	* 39	* 88		14.4				
Max Q Clear Time (g_c+I1), s	7.8	66.7		33.5	34.6	90.2		10.0				
Green Ext Time (p_c), s	0.0	19.5		2.3	0.9	0.0		0.1				

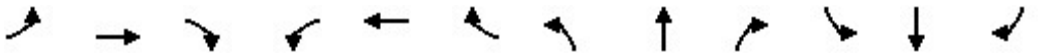
Intersection Summary		
HCM 6th Ctrl Delay		71.2
HCM 6th LOS		E

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 [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)	145	2280	20	10	2925	150	5	5	5	65	5	105
Future Volume (veh/h)	145	2280	20	10	2925	150	5	5	5	65	5	105
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	153	2400	21	11	3079	158	5	5	5	68	5	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	189	3746	1163	118	3805	1181	22	21	10	89	4	132
Arrive On Green	0.06	0.74	0.74	0.13	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	3428	5066	1572	1767	5066	1572	0	246	123	687	51	1572
Grp Volume(v), veh/h	153	2400	21	11	3079	158	15	0	0	73	0	111
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1767	1689	1572	370	0	0	738	0	1572
Q Serve(g_s), s	9.7	51.6	0.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.3
Cycle Q Clear(g_c), s	9.7	51.6	0.8	1.2	0.0	0.0	18.5	0.0	0.0	18.5	0.0	15.3
Prop In Lane	1.00		1.00	1.00		1.00	0.33		0.33	0.93		1.00
Lane Grp Cap(c), veh/h	189	3746	1163	118	3805	1181	53	0	0	94	0	132
V/C Ratio(X)	0.81	0.64	0.02	0.09	0.81	0.13	0.28	0.00	0.00	0.78	0.00	0.84
Avail Cap(c_a), veh/h	510	3746	1163	118	3805	1181	53	0	0	94	0	132
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.45	0.45	0.45	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	102.8	14.2	7.6	89.5	0.0	0.0	93.6	0.0	0.0	102.1	0.0	99.3
Incr Delay (d2), s/veh	8.0	0.9	0.0	0.2	0.9	0.1	2.9	0.0	0.0	33.3	0.0	35.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	18.8	0.3	0.6	0.3	0.0	0.8	0.0	0.0	5.1	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.8	15.0	7.6	89.6	0.9	0.1	96.4	0.0	0.0	135.4	0.0	134.9
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		2574			3248			15			184	
Approach Delay, s/veh		20.7			1.2			96.4			135.1	
Approach LOS		C			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.4	172.6		28.0	22.0	170.0		28.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 33	* 1.4E2		18.5	* 15	* 1.6E2		18.5				
Max Q Clear Time (g_c+I1), s	11.7	2.0		20.5	3.2	53.6		20.5				
Green Ext Time (p_c), s	0.4	68.1		0.0	0.0	28.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		13.8	
HCM 6th LOS		B	

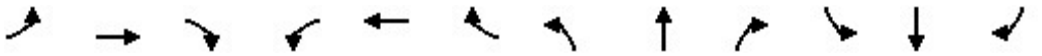
Notes

* 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)	125	2145	75	75	2730	80	125	130	45	105	100	230
Future Volume (veh/h)	125	2145	75	75	2730	80	125	130	45	105	100	230
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	132	2258	79	79	2874	84	132	137	47	111	105	242
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	120	3106	964	156	3209	996	185	260	89	156	365	309
Arrive On Green	0.14	1.00	1.00	0.12	0.84	0.84	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1767	5066	1572	1767	5066	1572	1026	1321	453	1190	1856	1572
Grp Volume(v), veh/h	132	2258	79	79	2874	84	132	0	184	111	105	242
Grp Sat Flow(s),veh/h/ln	1767	1689	1572	1767	1689	1572	1026	0	1774	1190	1856	1572
Q Serve(g_s), s	14.9	0.0	0.0	9.2	80.1	2.0	27.7	0.0	20.5	20.3	10.6	32.2
Cycle Q Clear(g_c), s	14.9	0.0	0.0	9.2	80.1	2.0	38.3	0.0	20.5	40.7	10.6	32.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		1.00
Lane Grp Cap(c), veh/h	120	3106	964	156	3209	996	185	0	349	156	365	309
V/C Ratio(X)	1.10	0.73	0.08	0.51	0.90	0.08	0.71	0.00	0.53	0.71	0.29	0.78
Avail Cap(c_a), veh/h	120	3106	964	156	3209	996	196	0	369	169	385	327
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.78	0.39	0.39	0.39	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	95.1	0.0	0.0	92.7	12.7	6.5	91.6	0.0	79.2	97.5	75.3	83.9
Incr Delay (d2), s/veh	102.9	1.2	0.1	1.1	1.8	0.1	10.9	0.0	1.2	12.0	0.4	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	0.3	0.0	4.2	18.5	0.7	8.0	0.0	9.6	6.8	5.2	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	198.0	1.2	0.1	93.7	14.5	6.6	102.5	0.0	80.5	109.5	75.7	95.1
LnGrp LOS	F	A	A	F	B	A	F	A	F	F	E	F
Approach Vol, veh/h		2469			3037			316			458	
Approach Delay, s/veh		11.7			16.3			89.7			94.1	
Approach LOS		B			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	146.5		51.5	26.5	142.0		51.5				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	14.9	136.9		45.7	16.9	134.9		45.7				
Max Q Clear Time (g_c+I1), s	16.9	82.1		40.3	11.2	2.0		42.7				
Green Ext Time (p_c), s	0.0	34.8		0.5	0.1	25.1		0.5				

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	320	1700	275	400	2310	150	390	860	310	295	900	190
Future Volume (veh/h)	320	1700	275	400	2310	150	390	860	310	295	900	190
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	337	1789	289	421	2432	158	411	905	326	311	947	200
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	309	2524	784	467	2758	856	451	479	428	279	642	341
Arrive On Green	0.18	1.00	1.00	0.14	0.54	0.54	0.09	0.14	0.14	0.08	0.13	0.13
Sat Flow, veh/h	3428	5066	1572	3428	5066	1572	4983	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	337	1789	289	421	2432	158	411	905	326	311	947	200
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1689	1572	1661	1763	1572	1714	1689	1572
Q Serve(g_s), s	19.8	0.9	0.2	26.6	92.5	11.2	18.0	29.9	29.9	17.9	27.9	25.1
Cycle Q Clear(g_c), s	19.8	0.9	0.2	26.6	92.5	11.2	18.0	29.9	29.9	17.9	27.9	25.1
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	309	2524	784	467	2758	856	451	479	428	279	642	341
V/C Ratio(X)	1.09	0.71	0.37	0.90	0.88	0.18	0.91	1.89	0.76	1.11	1.47	0.59
Avail Cap(c_a), veh/h	309	2524	784	760	2758	856	451	479	428	279	642	341
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	90.2	0.2	0.2	93.6	43.9	25.4	99.2	95.0	73.5	101.1	96.1	77.3
Incr Delay (d2), s/veh	69.2	1.2	0.9	8.8	4.5	0.5	22.6	407.8	7.9	88.4	221.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.0	0.4	0.2	12.3	38.6	4.4	8.7	40.8	17.9	11.4	25.4	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	159.4	1.3	1.1	102.4	48.4	25.8	121.8	502.8	81.4	189.4	317.8	79.9
LnGrp LOS	F	A	A	F	D	C	F	F	F	F	F	E
Approach Vol, veh/h		2415			3011			1642			1458	
Approach Delay, s/veh		23.4			54.7			323.8			257.8	
Approach LOS		C			D			F			F	

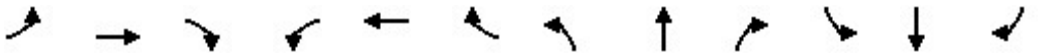
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	128.0	26.0	38.0	38.2	117.8	28.0	36.0
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	19.8	119.8	* 18	* 30	48.8	90.8	* 20	* 28
Max Q Clear Time (g_c+I1), s	21.8	94.5	19.9	31.9	28.6	2.9	20.0	29.9
Green Ext Time (p_c), s	0.0	21.2	0.0	0.0	1.4	31.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	132.4
HCM 6th LOS	F

Notes

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

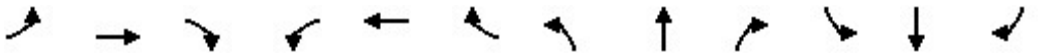
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	585	210	1020	745	0	0	0	0	485	90	215
Future Volume (vph)	0	585	210	1020	745	0	0	0	0	485	90	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (prot)		3505	1568	1595	3296					1665	1694	1568
Flt Permitted		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (perm)		3505	1568	1595	3296					1665	1694	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	616	221	1074	784	0	0	0	0	511	95	226
RTOR Reduction (vph)	0	0	170	0	0	0	0	0	0	0	0	133
Lane Group Flow (vph)	0	616	51	612	1246	0	0	0	0	301	305	93
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		37.9	37.9	118.4	118.4					40.4	40.4	40.4
Effective Green, g (s)		37.9	37.9	118.4	118.4					40.4	40.4	40.4
Actuated g/C Ratio		0.17	0.17	0.54	0.54					0.18	0.18	0.18
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		603	270	858	1773					305	311	287
v/s Ratio Prot		c0.18		c0.38	0.38					c0.18	0.18	
v/s Ratio Perm			0.03									0.06
v/c Ratio		1.02	0.19	0.71	0.70					0.99	0.98	0.32
Uniform Delay, d1		91.0	77.9	38.1	37.7					89.5	89.4	77.9
Progression Factor		0.63	0.56	0.18	0.09					1.00	1.00	1.00
Incremental Delay, d2		41.0	0.3	1.3	0.5					47.5	45.6	0.7
Delay (s)		98.6	43.7	8.1	4.1					137.0	135.0	78.6
Level of Service		F	D	A	A					F	F	E
Approach Delay (s)		84.1			5.4			0.0			120.4	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	84.8%	ICU Level of Service	E
Analysis Period (min)	15		

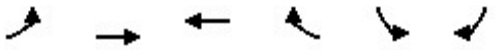
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	970	0	0	1520	435	245	0	1570	0	0	0
Future Volume (vph)	100	970	0	0	1520	435	245	0	1570	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3489			5036	1568	1665	1356	2854			
Flt Permitted		1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3489			5036	1568	1665	1356	2854			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1021	0	0	1600	458	258	0	1653	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	174	0	333	31	0	0	0
Lane Group Flow (vph)	0	1126	0	0	1600	284	232	222	1093	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		86.4			79.5	79.5	32.4	32.4	118.4			
Effective Green, g (s)		86.4			79.5	79.5	32.4	32.4	118.4			
Actuated g/C Ratio		0.39			0.36	0.36	0.15	0.15	0.54			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1370			1819	566	245	199	1535			
v/s Ratio Prot		c0.32			c0.32		0.14	c0.16	0.38			
v/s Ratio Perm						0.18						
v/c Ratio		0.82			0.88	0.50	0.95	1.12	0.71			
Uniform Delay, d1		59.9			65.8	54.8	92.9	93.8	38.0			
Progression Factor		0.10			0.87	1.38	1.00	1.00	1.00			
Incremental Delay, d2		0.4			4.9	2.4	42.6	99.0	1.6			
Delay (s)		6.5			62.0	78.0	135.5	192.8	39.6			
Level of Service		A			E	E	F	F	D			
Approach Delay (s)		6.5			65.6			95.7			0.0	
Approach LOS		A			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

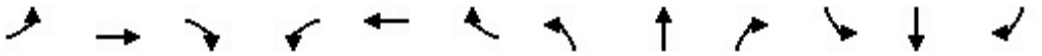
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	140	2175	2510	395	205	150
Future Volume (vph)	140	2175	2510	395	205	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	5036	5036	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	5036	5036	1568	3400	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	2289	2642	416	216	158
RTOR Reduction (vph)	0	0	0	52	0	1
Lane Group Flow (vph)	147	2289	2642	364	216	157
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	41.1	180.4	131.4	131.4	21.7	72.8
Effective Green, g (s)	41.1	180.4	131.4	131.4	21.7	72.8
Actuated g/C Ratio	0.19	0.82	0.60	0.60	0.10	0.33
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	635	4129	3007	936	335	518
v/s Ratio Prot	0.04	c0.45	c0.52		c0.06	0.10
v/s Ratio Perm				0.23		
v/c Ratio	0.23	0.55	0.88	0.39	0.64	0.30
Uniform Delay, d1	76.0	6.5	37.5	23.2	95.4	54.7
Progression Factor	1.49	0.42	0.39	0.23	1.00	1.00
Incremental Delay, d2	0.0	0.0	2.4	0.7	4.2	0.3
Delay (s)	113.6	2.8	17.1	6.1	99.7	55.1
Level of Service	F	A	B	A	F	E
Approach Delay (s)		9.5	15.6		80.8	
Approach LOS		A	B		F	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



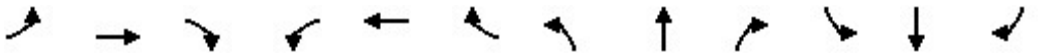
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	220	10	260	255	315	30	820	415	295	620	30
Future Volume (veh/h)	15	220	10	260	255	315	30	820	415	295	620	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	15	220	10	260	255	315	30	820	415	295	620	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	25	285	13	314	299	253	39	2175	970	328	2364	114
Arrive On Green	0.01	0.08	0.08	0.03	0.05	0.05	0.02	0.60	0.60	0.09	0.67	0.67
Sat Flow, veh/h	1810	3517	159	3510	1900	1610	1810	3610	1610	3510	3505	169
Grp Volume(v), veh/h	15	112	118	260	255	315	30	820	415	295	319	331
Grp Sat Flow(s),veh/h/ln	1810	1805	1871	1755	1900	1610	1810	1805	1610	1755	1805	1869
Q Serve(g_s), s	1.8	13.4	13.6	16.2	29.3	28.0	3.6	25.7	30.4	18.3	15.4	15.4
Cycle Q Clear(g_c), s	1.8	13.4	13.6	16.2	29.3	28.0	3.6	25.7	30.4	18.3	15.4	15.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	25	146	152	314	299	253	39	2175	970	328	1217	1261
V/C Ratio(X)	0.61	0.77	0.77	0.83	0.85	1.24	0.77	0.38	0.43	0.90	0.26	0.26
Avail Cap(c_a), veh/h	307	307	318	866	470	398	188	2175	970	365	1217	1261
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	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	107.9	99.1	99.1	105.1	101.8	68.4	107.1	22.5	23.4	98.7	14.2	14.2
Incr Delay (d2), s/veh	8.6	8.2	8.2	4.7	6.9	123.2	11.1	0.5	1.4	22.8	0.5	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(50%),veh/ln	0.9	6.7	7.0	8.0	15.7	20.9	1.8	11.1	12.3	9.4	6.5	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.6	107.2	107.3	109.8	108.6	191.6	118.2	23.0	24.8	121.5	14.7	14.7
LnGrp LOS	F	F	F	F	F	F	F	C	C	F	B	B
Approach Vol, veh/h		245			830			1265			945	
Approach Delay, s/veh		107.8			140.5			25.8			48.0	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	155.2	10.7	42.2	27.7	139.4	27.4	25.5
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 23	76.1	* 37	* 54	* 23	76.1	* 54	* 37
Max Q Clear Time (g_c+I1), s	5.6	17.4	3.8	31.3	20.3	32.4	18.2	15.6
Green Ext Time (p_c), s	0.0	1.8	0.0	3.3	0.3	4.9	1.5	0.8

Intersection Summary	
HCM 6th Ctrl Delay	67.3
HCM 6th LOS	E

Notes

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



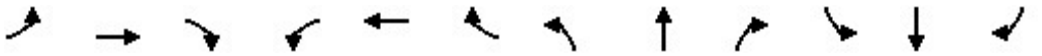
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	1665	105	210	2210	360	170	585	310	400	590	300
Future Volume (veh/h)	175	1665	105	210	2210	360	170	585	310	400	590	300
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	175	1665	105	210	2210	360	170	585	310	400	590	300
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	2587	163	626	2788	1026	203	633	569	349	783	429
Arrive On Green	0.10	0.82	0.82	0.18	0.54	0.54	0.06	0.18	0.18	0.10	0.22	0.22
Sat Flow, veh/h	3510	6331	399	3510	5187	1610	3510	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	175	1289	481	210	2210	360	170	585	310	400	590	300
Grp Sat Flow(s),veh/h/ln	1755	1634	1828	1755	1729	1610	1755	1805	1610	1755	1805	1610
Q Serve(g_s), s	10.9	22.3	22.3	11.5	75.5	23.0	10.5	35.1	7.2	21.9	33.7	36.9
Cycle Q Clear(g_c), s	10.9	22.3	22.3	11.5	75.5	23.0	10.5	35.1	7.2	21.9	33.7	36.9
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	2003	747	626	2788	1026	203	633	569	349	783	429
V/C Ratio(X)	1.01	0.64	0.64	0.34	0.79	0.35	0.84	0.92	0.54	1.14	0.75	0.70
Avail Cap(c_a), veh/h	174	2003	747	626	2788	1026	349	901	689	349	901	482
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.72	0.72	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	99.1	13.9	13.9	79.0	41.0	18.7	102.6	89.3	29.0	99.1	80.6	72.7
Incr Delay (d2), s/veh	59.5	1.2	3.1	0.1	2.4	0.9	3.5	9.6	0.3	93.5	2.5	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(50%),veh/ln	6.2	5.0	5.9	5.2	32.3	8.9	4.9	17.2	9.0	14.5	15.9	15.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.6	15.1	17.0	79.1	43.4	19.6	106.1	98.9	29.3	192.5	83.1	75.6
LnGrp LOS	F	B	B	E	D	B	F	F	C	F	F	E
Approach Vol, veh/h		1945			2780			1065			1290	
Approach Delay, s/veh		28.5			43.0			79.8			115.3	
Approach LOS		C			D			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	125.3	30.0	46.7	46.3	97.0	20.8	55.8
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 11	* 1E2	* 22	* 55	* 23	* 90	* 22	* 55
Max Q Clear Time (g_c+I1), s	12.9	77.5	23.9	37.1	13.5	24.3	12.5	38.9
Green Ext Time (p_c), s	0.0	16.0	0.0	1.5	0.2	12.6	0.2	1.4

Intersection Summary	
HCM 6th Ctrl Delay	57.7
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)	80	1975	130	135	2670	140	85	175	80	125	140	70
Future Volume (veh/h)	80	1975	130	135	2670	140	85	175	80	125	140	70
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	80	1975	130	135	2670	140	85	175	80	125	140	70
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	307	3533	233	151	3035	158	193	188	86	168	205	103
Arrive On Green	0.17	0.56	0.56	0.06	0.32	0.32	0.05	0.15	0.15	0.07	0.17	0.17
Sat Flow, veh/h	1810	6312	415	1810	6407	334	1810	1234	564	1810	1195	597
Grp Volume(v), veh/h	80	1534	571	135	2040	770	85	0	255	125	0	210
Grp Sat Flow(s),veh/h/ln	1810	1634	1825	1810	1634	1840	1810	0	1798	1810	0	1792
Q Serve(g_s), s	8.4	44.1	44.1	16.3	86.6	87.4	8.5	0.0	30.8	12.7	0.0	24.2
Cycle Q Clear(g_c), s	8.4	44.1	44.1	16.3	86.6	87.4	8.5	0.0	30.8	12.7	0.0	24.2
Prop In Lane	1.00		0.23	1.00		0.18	1.00		0.31	1.00		0.33
Lane Grp Cap(c), veh/h	307	2744	1022	151	2322	871	193	0	274	168	0	308
V/C Ratio(X)	0.26	0.56	0.56	0.89	0.88	0.88	0.44	0.00	0.93	0.74	0.00	0.68
Avail Cap(c_a), veh/h	307	2744	1022	191	2322	871	269	0	406	209	0	405
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	79.4	31.0	31.0	102.9	69.1	69.4	71.8	0.0	92.1	74.4	0.0	85.4
Incr Delay (d2), s/veh	0.2	0.8	2.2	28.8	5.1	12.7	0.6	0.0	21.8	7.6	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	17.6	20.0	9.1	38.2	45.2	4.0	0.0	16.2	6.4	0.0	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.5	31.9	33.2	131.7	74.2	82.0	72.3	0.0	114.0	82.0	0.0	88.4
LnGrp LOS	E	C	C	F	E	F	E	A	F	F	A	F
Approach Vol, veh/h		2185			2945			340			335	
Approach Delay, s/veh		34.0			78.9			103.6			86.0	
Approach LOS		C			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.1	111.0	23.1	41.8	25.2	130.0	18.8	46.1
Change Period (Y+Rc), s	6.8	6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	16.2	104.2	19.7	49.7	23.2	97.2	19.7	49.7
Max Q Clear Time (g_c+I1), s	10.4	89.4	14.7	32.8	18.3	46.1	10.5	26.2
Green Ext Time (p_c), s	0.0	11.8	0.1	0.7	0.1	16.1	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	63.8
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1770	165	125	2570	30	95	115	120	80	135	35
Future Volume (veh/h)	55	1770	165	125	2570	30	95	115	120	80	135	35
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	55	1770	165	125	2570	30	95	115	120	80	135	35
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	3317	309	434	4733	55	143	313	279	157	252	65
Arrive On Green	0.01	0.18	0.18	0.37	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	6128	571	1810	6710	78	1234	1805	1610	1163	1455	377
Grp Volume(v), veh/h	55	1416	519	125	1877	723	95	115	120	80	0	170
Grp Sat Flow(s),veh/h/ln	1810	1634	1797	1810	1634	1886	1234	1805	1610	1163	0	1832
Q Serve(g_s), s	1.9	57.7	57.7	0.0	0.0	0.0	16.7	12.4	14.6	14.5	0.0	18.6
Cycle Q Clear(g_c), s	1.9	57.7	57.7	0.0	0.0	0.0	35.3	12.4	14.6	29.1	0.0	18.6
Prop In Lane	1.00		0.32	1.00		0.04	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	158	2654	973	434	3458	1330	143	313	279	157	0	318
V/C Ratio(X)	0.35	0.53	0.53	0.29	0.54	0.54	0.67	0.37	0.43	0.51	0.00	0.53
Avail Cap(c_a), veh/h	308	2654	973	434	3458	1330	215	418	373	225	0	425
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.6	65.1	65.1	40.2	0.0	0.0	98.9	80.3	81.2	94.2	0.0	82.8
Incr Delay (d2), s/veh	0.5	0.8	2.1	0.1	0.6	1.6	5.3	0.7	1.0	2.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	25.7	28.7	4.5	0.2	0.6	5.6	5.9	6.3	4.6	0.0	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	65.9	67.2	40.4	0.6	1.6	104.2	81.0	82.2	96.7	0.0	84.2
LnGrp LOS	A	E	E	D	A	A	F	F	F	F	A	F
Approach Vol, veh/h		1990			2725			330			250	
Approach Delay, s/veh		64.7			2.7			88.1			88.2	
Approach LOS		E			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.7	162.1		46.2	47.8	126.0		46.2				
Change Period (Y+Rc), s	6.9	6.9		* 8	6.9	6.9		* 8				
Max Green Setting (Gmax), s	23.1	124.1		* 51	28.1	119.1		* 51				
Max Q Clear Time (g_c+I1), s	3.9	2.0		37.3	2.0	59.7		31.1				
Green Ext Time (p_c), s	0.0	28.8		0.9	0.1	14.2		0.7				

Intersection Summary		
HCM 6th Ctrl Delay		35.4
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)	50	1840	0	0	2705	235	0	0	0	295	0	25
Future Volume (veh/h)	50	1840	0	0	2705	235	0	0	0	295	0	25
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	50	1840	0	0	2705	235	0	0	0	318	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	138	5424	0	246	4800	413	0	1	1	366	192	0
Arrive On Green	0.04	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.10	0.00	0.00
Sat Flow, veh/h	1810	6802	0	1810	6176	531	0	1900	1610	3619	1900	0
Grp Volume(v), veh/h	50	1840	0	0	2141	799	0	0	0	318	0	0
Grp Sat Flow(s),veh/h/ln	1810	1634	0	1810	1634	1804	0	1900	1610	1810	1900	0
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.29	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	138	5424	0	246	3811	1403	0	1	1	366	192	0
V/C Ratio(X)	0.36	0.34	0.00	0.00	0.56	0.57	0.00	0.00	0.00	0.87	0.00	0.00
Avail Cap(c_a), veh/h	331	5424	0	436	3811	1403	0	126	107	865	454	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)	1.00	1.00	0.00	0.00	0.15	0.15	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.5	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.2	0.0	0.0	0.1	0.3	0.0	0.0	0.0	6.4	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	9.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.1	0.2	0.0	0.0	0.1	0.3	0.0	0.0	0.0	103.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	F	A	A
Approach Vol, veh/h		1890			2940			0			318	
Approach Delay, s/veh		0.3			0.1			0.0			103.9	
Approach LOS		A			A						F	

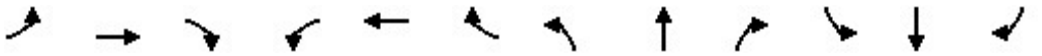
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	177.8		0.0	0.0	189.4		30.6				
Change Period (Y+Rc), s	6.8	6.8		* 8.4	6.8	6.8		8.4				
Max Green Setting (Gmax), s	28.2	94.2		* 15	23.2	99.2		52.6				
Max Q Clear Time (g_c+I1), s	3.3	2.0		0.0	0.0	2.0		21.1				
Green Ext Time (p_c), s	0.0	38.6		0.0	0.0	15.1		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	1465	275	205	1890	690	435	770	305	780	805	615
Future Volume (veh/h)	390	1465	275	205	1890	690	435	770	305	780	805	615
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	390	1465	0	205	1890	0	435	770	0	780	805	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	361	2294		238	2113		421	599		836	843	
Arrive On Green	0.21	0.88	0.00	0.07	0.41	0.00	0.12	0.12	0.00	0.24	0.23	0.00
Sat Flow, veh/h	3510	5187	1610	3510	5187	1610	3510	5187	1610	3510	3610	1610
Grp Volume(v), veh/h	390	1465	0	205	1890	0	435	770	0	780	805	0
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1610	1755	1729	1610	1755	1805	1610
Q Serve(g_s), s	22.6	16.5	0.0	12.7	74.8	0.0	26.4	25.4	0.0	47.9	48.4	0.0
Cycle Q Clear(g_c), s	22.6	16.5	0.0	12.7	74.8	0.0	26.4	25.4	0.0	47.9	48.4	0.0
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	361	2294		238	2113		421	599		836	843	
V/C Ratio(X)	1.08	0.64		0.86	0.89		1.03	1.29		0.93	0.95	
Avail Cap(c_a), veh/h	361	2294		361	2113		421	599		868	876	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.00	0.50	0.50	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	87.4	8.0	0.0	101.5	60.8	0.0	96.8	97.3	0.0	82.1	83.2	0.0
Incr Delay (d2), s/veh	68.9	1.3	0.0	4.5	3.4	0.0	52.5	140.9	0.0	16.4	19.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	3.6	0.0	6.0	33.0	0.0	15.1	19.2	0.0	23.5	24.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	156.3	9.3	0.0	106.0	64.2	0.0	149.3	238.2	0.0	98.5	103.1	0.0
LnGrp LOS	F	A		F	E		F	F		F	F	
Approach Vol, veh/h		1855			2095			1205			1585	
Approach Delay, s/veh		40.2			68.3			206.1			100.8	
Approach LOS		D			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.0	97.0	60.0	33.0	22.3	104.7	34.0	59.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	20.6	89.6	* 54	* 25	22.6	87.6	* 26	* 53
Max Q Clear Time (g_c+I1), s	24.6	76.8	49.9	27.4	14.7	18.5	28.4	50.4
Green Ext Time (p_c), s	0.0	8.0	1.4	0.0	0.2	9.8	0.0	1.0

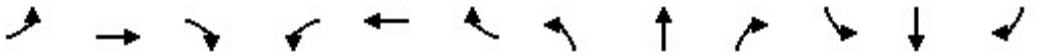
Intersection Summary	
HCM 6th Ctrl Delay	92.8
HCM 6th LOS	F

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, 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)	70	2070	415	140	2170	10	540	45	630	50	85	75
Future Volume (veh/h)	70	2070	415	140	2170	10	540	45	630	50	85	75
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	1870	1856	1856	1900	1841	1885	1841	1900	1767	1781
Adj Flow Rate, veh/h	70	2070	0	140	2170	10	572	0	630	50	85	75
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	2	3	3	0	4	1	4	0	9	8
Cap, veh/h	85	2250		603	2868	912	642	0	1120	108	105	90
Arrive On Green	0.05	0.44	0.00	0.23	0.75	0.75	0.18	0.00	0.18	0.06	0.06	0.06
Sat Flow, veh/h	1810	5147	1585	3428	5066	1610	3506	0	3120	1810	1767	1510
Grp Volume(v), veh/h	70	2070	0	140	2170	10	572	0	630	50	85	75
Grp Sat Flow(s),veh/h/ln	1810	1716	1585	1714	1689	1610	1753	0	1560	1810	1767	1510
Q Serve(g_s), s	8.4	83.3	0.0	7.3	54.1	0.3	35.0	0.0	0.0	5.9	10.5	10.8
Cycle Q Clear(g_c), s	8.4	83.3	0.0	7.3	54.1	0.3	35.0	0.0	0.0	5.9	10.5	10.8
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	85	2250		603	2868	912	642	0	1120	108	105	90
V/C Ratio(X)	0.83	0.92		0.23	0.76	0.01	0.89	0.00	0.56	0.46	0.81	0.83
Avail Cap(c_a), veh/h	100	2250		603	2868	912	725	0	1194	160	156	133
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.53	0.00	0.66	0.66	0.66	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	104.0	58.3	0.0	72.3	18.5	11.8	87.7	0.0	56.6	100.0	102.2	102.3
Incr Delay (d2), s/veh	19.1	4.3	0.0	0.1	1.3	0.0	12.2	0.0	0.5	3.1	17.1	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	36.2	0.0	3.2	17.3	0.1	16.9	0.0	14.5	2.9	5.4	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	123.0	62.6	0.0	72.4	19.7	11.8	99.9	0.0	57.2	103.1	119.2	126.1
LnGrp LOS	F	E		E	B	B	F	A	E	F	F	F
Approach Vol, veh/h		2140			2320			1202			210	
Approach Delay, s/veh		64.6			22.9			77.5			117.8	
Approach LOS		E			C			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.1	132.4		47.8	46.5	104.0		21.7				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 12	* 1.1E2		* 46	* 27	* 96		19.4				
Max Q Clear Time (g_c+I1), s	10.4	56.1		37.0	9.3	85.3		12.8				
Green Ext Time (p_c), s	0.0	19.5		3.3	0.4	7.6		0.3				

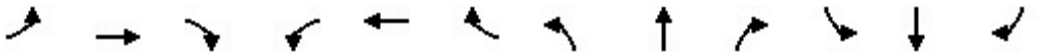
Intersection Summary		
HCM 6th Ctrl Delay		52.7
HCM 6th LOS		D

Notes

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

User approved volume balancing among the lanes for turning movement.

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



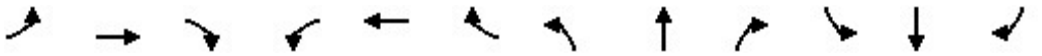
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	2945	10	5	2245	115	5	5	5	135	5	90
Future Volume (veh/h)	70	2945	10	5	2245	115	5	5	5	135	5	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	70	2945	10	5	2245	115	5	5	5	135	5	90
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	241	3430	1065	11	3105	964	28	28	17	180	5	359
Arrive On Green	0.14	1.00	1.00	0.01	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3510	5187	1610	1810	5187	1610	26	123	75	660	24	1610
Grp Volume(v), veh/h	70	2945	10	5	2245	115	15	0	0	140	0	90
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1810	1729	1610	224	0	0	685	0	1610
Q Serve(g_s), s	3.9	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.0	0.0	0.0	10.1
Cycle Q Clear(g_c), s	3.9	0.0	0.0	0.6	0.0	0.0	47.1	0.0	0.0	46.7	0.0	10.1
Prop In Lane	1.00		1.00	1.00		1.00	0.33		0.33	0.96		1.00
Lane Grp Cap(c), veh/h	241	3430	1065	11	3105	964	72	0	0	185	0	359
V/C Ratio(X)	0.29	0.86	0.01	0.46	0.72	0.12	0.21	0.00	0.00	0.76	0.00	0.25
Avail Cap(c_a), veh/h	241	3430	1065	146	3105	964	103	0	0	214	0	392
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)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	90.1	0.0	0.0	108.3	0.0	0.0	71.1	0.0	0.0	84.5	0.0	70.3
Incr Delay (d2), s/veh	0.7	3.0	0.0	19.7	1.0	0.2	1.4	0.0	0.0	12.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.0	0.0	0.3	0.3	0.0	0.7	0.0	0.0	8.6	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.8	3.0	0.0	128.0	1.0	0.2	72.5	0.0	0.0	97.0	0.0	70.7
LnGrp LOS	F	A	A	F	A	A	E	A	A	F	A	E
Approach Vol, veh/h		3025			2365			15			230	
Approach Delay, s/veh		5.1			1.3			72.5			86.7	
Approach LOS		A			A			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.4	139.0		58.6	8.6	152.8		58.6				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 11	* 1.3E2		53.5	* 18	* 1.2E2		53.5				
Max Q Clear Time (g_c+I1), s	5.9	2.0		49.1	2.6	2.0		48.7				
Green Ext Time (p_c), s	0.1	25.0		0.0	0.0	52.5		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		7.0	
HCM 6th LOS		A	

Notes

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



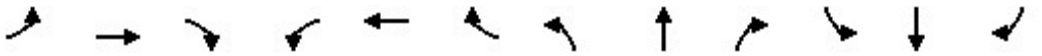
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	2845	95	75	2060	155	125	95	85	180	105	180
Future Volume (veh/h)	145	2845	95	75	2060	155	125	95	85	180	105	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	145	2845	95	75	2060	155	125	95	85	180	105	180
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	3416	1061	73	2945	914	201	184	164	163	377	320
Arrive On Green	0.26	1.00	1.00	0.04	0.57	0.57	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1112	924	827	1223	1900	1610
Grp Volume(v), veh/h	145	2845	95	75	2060	155	125	0	180	180	105	180
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1112	0	1751	1223	1900	1610
Q Serve(g_s), s	15.5	0.0	0.0	8.9	62.6	10.1	23.6	0.0	20.2	23.5	10.3	22.2
Cycle Q Clear(g_c), s	15.5	0.0	0.0	8.9	62.6	10.1	34.0	0.0	20.2	43.7	10.3	22.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.47	1.00		1.00
Lane Grp Cap(c), veh/h	238	3416	1061	73	2945	914	201	0	348	163	377	320
V/C Ratio(X)	0.61	0.83	0.09	1.02	0.70	0.17	0.62	0.00	0.52	1.10	0.28	0.56
Avail Cap(c_a), veh/h	238	3416	1061	73	2945	914	201	0	348	163	377	320
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	0.64	0.64	0.64	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.2	0.0	0.0	105.6	34.1	22.7	89.2	0.0	78.7	100.6	74.8	79.5
Incr Delay (d2), s/veh	2.8	1.6	0.1	90.9	0.9	0.3	5.7	0.0	1.3	100.2	0.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.5	0.0	6.0	26.0	3.9	7.2	0.0	9.4	14.0	5.1	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.0	1.6	0.1	196.4	35.0	23.0	94.9	0.0	80.1	200.8	75.2	81.8
LnGrp LOS	E	A	A	F	D	C	F	A	F	F	E	F
Approach Vol, veh/h		3085			2290			305			465	
Approach Delay, s/veh		5.2			39.5			86.2			126.4	
Approach LOS		A			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	132.0		52.0	16.0	152.0		52.0				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	28.9	124.9		43.7	8.9	144.9		43.7				
Max Q Clear Time (g_c+I1), s	17.5	64.6		36.0	10.9	2.0		45.7				
Green Ext Time (p_c), s	0.2	19.2		0.6	0.0	51.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		31.2	
HCM 6th LOS		C	

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)	430	2295	390	320	1705	125	355	910	320	325	535	230
Future Volume (veh/h)	430	2295	390	320	1705	125	355	910	320	325	535	230
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	1826	1870	1870	1870	1841	1870	1856	1870	1870	1885
Adj Flow Rate, veh/h	430	2295	390	320	1705	125	355	910	320	325	535	230
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	4	5	2	2	2	4	2	3	2	2	1
Cap, veh/h	474	2566	790	350	2423	752	406	564	409	281	807	472
Arrive On Green	0.18	0.68	0.68	0.10	0.47	0.47	0.08	0.16	0.16	0.08	0.16	0.16
Sat Flow, veh/h	3456	5025	1547	3456	5106	1585	4944	3554	1572	3456	5106	1598
Grp Volume(v), veh/h	430	2295	390	320	1705	125	355	910	320	325	535	230
Grp Sat Flow(s),veh/h/ln	1728	1675	1547	1728	1702	1585	1648	1777	1572	1728	1702	1598
Q Serve(g_s), s	26.8	82.1	26.8	20.2	58.0	9.9	15.6	34.9	34.9	17.9	21.7	26.1
Cycle Q Clear(g_c), s	26.8	82.1	26.8	20.2	58.0	9.9	15.6	34.9	34.9	17.9	21.7	26.1
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	474	2566	790	350	2423	752	406	564	409	281	807	472
V/C Ratio(X)	0.91	0.89	0.49	0.92	0.70	0.17	0.88	1.61	0.78	1.16	0.66	0.49
Avail Cap(c_a), veh/h	767	2566	790	358	2423	752	470	564	409	281	807	472
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	88.5	30.4	21.6	97.9	45.6	33.0	99.9	92.6	75.7	101.1	87.1	63.8
Incr Delay (d2), s/veh	4.4	2.4	0.9	27.1	1.7	0.5	15.1	284.5	9.6	102.6	2.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	29.0	9.1	10.3	24.6	4.0	7.3	38.3	17.9	12.1	9.7	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.9	32.8	22.5	125.0	47.3	33.4	115.0	377.1	85.2	203.7	89.2	64.6
LnGrp LOS	F	C	C	F	D	C	F	F	F	F	F	E
Approach Vol, veh/h		3115			2150			1585			1090	
Approach Delay, s/veh		39.8			58.1			259.5			118.1	
Approach LOS		D			E			F			F	

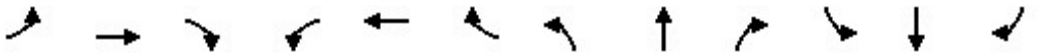
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.4	112.6	26.0	43.0	30.5	120.5	26.1	42.9
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	48.8	85.8	* 18	* 35	22.8	111.8	* 21	* 32
Max Q Clear Time (g_c+I1), s	28.8	60.0	19.9	36.9	22.2	84.1	17.6	28.1
Green Ext Time (p_c), s	1.4	15.4	0.0	0.0	0.1	22.9	0.4	1.1

Intersection Summary	
HCM 6th Ctrl Delay	99.4
HCM 6th LOS	F

Notes

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

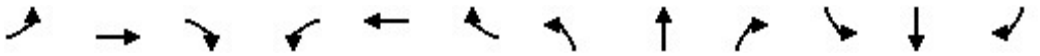
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	640	290	1470	730	0	0	0	0	390	70	100
Future Volume (vph)	0	640	290	1470	730	0	0	0	0	390	70	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (prot)		3610	1615	1643	3373					1715	1744	1615
Flt Permitted		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (perm)		3610	1615	1643	3373					1715	1744	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	640	290	1470	730	0	0	0	0	390	70	100
RTOR Reduction (vph)	0	0	110	0	0	0	0	0	0	0	0	78
Lane Group Flow (vph)	0	640	180	735	1465	0	0	0	0	230	230	22
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		42.9	42.9	124.4	124.4					29.4	29.4	29.4
Effective Green, g (s)		42.9	42.9	124.4	124.4					29.4	29.4	29.4
Actuated g/C Ratio		0.19	0.19	0.57	0.57					0.13	0.13	0.13
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		703	314	929	1907					229	233	215
v/s Ratio Prot		c0.18		c0.45	0.43					c0.13	0.13	
v/s Ratio Perm			0.11									0.01
v/c Ratio		0.91	0.57	0.79	0.77					1.00	0.99	0.10
Uniform Delay, d1		86.7	80.2	37.6	36.7					95.3	95.1	83.7
Progression Factor		0.66	0.44	0.16	0.18					1.00	1.00	1.00
Incremental Delay, d2		14.3	2.2	2.3	0.8					60.6	54.8	0.2
Delay (s)		71.8	37.1	8.2	7.2					155.9	149.9	83.9
Level of Service		E	D	A	A					F	F	F
Approach Delay (s)		61.0			7.6			0.0			140.6	
Approach LOS		E			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		

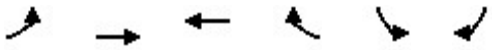
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	845	0	0	2025	650	175	0	1095	0	0	0
Future Volume (vph)	190	845	0	0	2025	650	175	0	1095	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3577			5187	1615	1715	1397	2939			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3577			5187	1615	1715	1397	2939			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	190	845	0	0	2025	650	175	0	1095	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	195	0	318	40	0	0	0
Lane Group Flow (vph)	0	1035	0	0	2025	455	157	50	705	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		80.4			99.5	99.5	18.4	18.4	124.4			
Effective Green, g (s)		80.4			99.5	99.5	18.4	18.4	124.4			
Actuated g/C Ratio		0.37			0.45	0.45	0.08	0.08	0.57			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1307			2345	730	143	116	1661			
v/s Ratio Prot		c0.29			c0.39		c0.09	0.04	0.24			
v/s Ratio Perm						0.28						
v/c Ratio		0.79			0.86	0.62	1.10	0.43	0.42			
Uniform Delay, d1		62.3			54.1	46.0	100.8	95.8	27.3			
Progression Factor		0.18			0.58	0.26	1.00	1.00	1.00			
Incremental Delay, d2		1.2			2.9	2.5	103.9	2.6	0.2			
Delay (s)		12.3			34.3	14.6	204.7	98.4	27.5			
Level of Service		B			C	B	F	F	C			
Approach Delay (s)		12.3			29.5			70.0			0.0	
Approach LOS		B			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

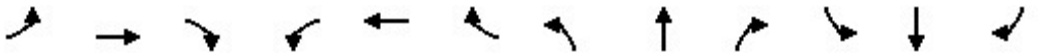
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	195	2550	2120	160	315	195
Future Volume (vph)	195	2550	2120	160	315	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3502	5187	5187	1615	3502	1615
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3502	5187	5187	1615	3502	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	195	2550	2120	160	315	195
RTOR Reduction (vph)	0	0	0	23	0	1
Lane Group Flow (vph)	195	2550	2120	137	315	194
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	44.0	176.5	124.6	124.6	25.6	79.6
Effective Green, g (s)	44.0	176.5	124.6	124.6	25.6	79.6
Actuated g/C Ratio	0.20	0.80	0.57	0.57	0.12	0.36
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	700	4161	2937	914	407	584
v/s Ratio Prot	0.06	c0.49	c0.41		c0.09	0.12
v/s Ratio Perm				0.09		
v/c Ratio	0.28	0.61	0.72	0.15	0.77	0.33
Uniform Delay, d1	74.6	8.5	35.0	22.6	94.4	50.9
Progression Factor	1.30	0.61	0.42	0.54	1.00	1.00
Incremental Delay, d2	0.0	0.1	1.3	0.3	8.9	0.3
Delay (s)	97.0	5.3	16.1	12.4	103.3	51.2
Level of Service	F	A	B	B	F	D
Approach Delay (s)		11.8	15.8		83.4	
Approach LOS		B	B		F	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



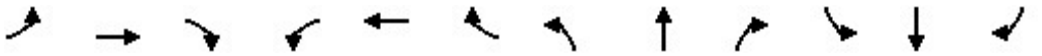
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	320	30	680	240	560	25	715	605	490	1115	45
Future Volume (veh/h)	30	320	30	680	240	560	25	715	605	490	1115	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	32	337	32	716	253	589	26	753	637	516	1174	47
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	287	385	36	737	317	269	33	1313	586	551	1777	71
Arrive On Green	0.16	0.12	0.12	0.07	0.06	0.06	0.02	0.37	0.37	0.16	0.51	0.51
Sat Flow, veh/h	1767	3256	307	3428	1856	1572	1767	3526	1572	3428	3455	138
Grp Volume(v), veh/h	32	181	188	716	253	589	26	753	637	516	599	622
Grp Sat Flow(s),veh/h/ln	1767	1763	1800	1714	1856	1572	1767	1763	1572	1714	1763	1831
Q Serve(g_s), s	3.4	22.3	22.6	45.8	29.6	27.3	3.2	37.5	82.0	32.7	55.0	55.0
Cycle Q Clear(g_c), s	3.4	22.3	22.6	45.8	29.6	27.3	3.2	37.5	82.0	32.7	55.0	55.0
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	287	208	213	737	317	269	33	1313	586	551	907	941
V/C Ratio(X)	0.11	0.87	0.88	0.97	0.80	2.19	0.78	0.57	1.09	0.94	0.66	0.66
Avail Cap(c_a), veh/h	287	356	363	737	585	496	144	1313	586	591	907	941
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	0.38	0.38	0.38	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	78.5	95.4	95.5	101.5	100.0	54.6	107.5	55.1	69.0	91.2	39.3	39.3
Incr Delay (d2), s/veh	0.1	11.4	12.3	14.3	2.5	540.6	13.3	1.8	63.2	21.9	3.8	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	11.0	11.4	22.9	15.2	52.0	1.6	17.0	43.4	16.2	24.6	25.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.6	106.7	107.8	115.8	102.6	595.3	120.8	56.9	132.2	113.1	43.1	43.0
LnGrp LOS	E	F	F	F	F	F	F	E	F	F	D	D
Approach Vol, veh/h		401			1558			1416			1737	
Approach Delay, s/veh		105.0			294.9			91.9			63.8	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	120.0	43.5	45.2	42.5	88.9	55.0	33.7
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 18	81.1	* 22	* 69	* 38	61.1	* 47	* 44
Max Q Clear Time (g_c+I1), s	5.2	57.0	5.4	31.6	34.7	84.0	47.8	24.6
Green Ext Time (p_c), s	0.0	4.0	0.0	6.0	0.6	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	145.3
HCM 6th LOS	F

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)	255	2805	115	400	1910	495	220	715	315	610	1085	280
Future Volume (veh/h)	255	2805	115	400	1910	495	220	715	315	610	1085	280
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	268	2953	121	421	2011	521	232	753	332	642	1142	295
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	295	2446	100	331	2009	866	264	794	506	528	1066	611
Arrive On Green	0.03	0.13	0.13	0.10	0.40	0.40	0.08	0.23	0.23	0.15	0.30	0.30
Sat Flow, veh/h	3428	6338	258	3428	5066	1572	3428	3526	1572	3428	3526	1572
Grp Volume(v), veh/h	268	2226	848	421	2011	521	232	753	332	642	1142	295
Grp Sat Flow(s),veh/h/ln	1714	1596	1809	1714	1689	1572	1714	1763	1572	1714	1763	1572
Q Serve(g_s), s	17.2	84.9	84.9	21.2	87.2	49.0	14.7	46.3	14.6	33.9	66.5	31.1
Cycle Q Clear(g_c), s	17.2	84.9	84.9	21.2	87.2	49.0	14.7	46.3	14.6	33.9	66.5	31.1
Prop In Lane	1.00		0.14	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	1847	698	331	2009	866	264	794	506	528	1066	611
V/C Ratio(X)	0.91	1.20	1.21	1.27	1.00	0.60	0.88	0.95	0.66	1.22	1.07	0.48
Avail Cap(c_a), veh/h	295	1847	698	331	2009	866	341	864	537	528	1066	611
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	106.0	96.0	96.0	99.4	66.4	33.2	100.5	83.9	32.5	93.1	76.7	50.7
Incr Delay (d2), s/veh	4.2	92.7	98.0	144.2	20.4	3.1	15.8	17.9	2.0	113.3	48.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	52.7	60.8	16.1	40.7	19.4	7.2	22.9	9.5	23.3	37.1	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.2	188.7	194.0	243.6	86.8	36.3	116.4	101.8	34.5	206.4	125.4	50.9
LnGrp LOS	F	F	F	F	F	D	F	F	C	F	F	D
Approach Vol, veh/h		3342			2953			1317			2079	
Approach Delay, s/veh		183.7			100.2			87.4			139.8	
Approach LOS		F			F			F			F	

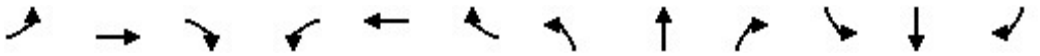
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	94.3	42.0	57.7	28.3	92.0	25.0	74.6
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 19	* 83	* 34	* 54	* 17	* 85	* 22	* 66
Max Q Clear Time (g_c+I1), s	19.2	89.2	35.9	48.3	23.2	86.9	16.7	68.5
Green Ext Time (p_c), s	0.0	0.0	0.0	1.3	0.0	0.0	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	135.8
HCM 6th LOS	F

Notes

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

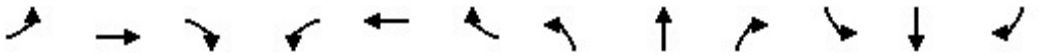
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	3445	185	125	2430	120	215	205	95	175	310	105
Future Volume (veh/h)	105	3445	185	125	2430	120	215	205	95	175	310	105
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	111	3626	195	132	2558	126	226	216	100	184	326	111
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	153	2760	145	146	2746	135	192	303	140	279	336	114
Arrive On Green	0.17	0.88	0.88	0.03	0.14	0.14	0.09	0.25	0.25	0.09	0.25	0.25
Sat Flow, veh/h	1767	6255	329	1767	6279	308	1767	1200	556	1767	1324	451
Grp Volume(v), veh/h	111	2755	1066	132	1948	736	226	0	316	184	0	437
Grp Sat Flow(s),veh/h/ln	1767	1596	1796	1767	1596	1800	1767	0	1756	1767	0	1774
Q Serve(g_s), s	13.1	97.1	97.1	16.4	88.5	88.9	18.7	0.0	36.1	16.9	0.0	53.6
Cycle Q Clear(g_c), s	13.1	97.1	97.1	16.4	88.5	88.9	18.7	0.0	36.1	16.9	0.0	53.6
Prop In Lane	1.00		0.18	1.00		0.17	1.00		0.32	1.00		0.25
Lane Grp Cap(c), veh/h	153	2112	793	146	2093	787	192	0	443	279	0	450
V/C Ratio(X)	0.72	1.30	1.34	0.90	0.93	0.93	1.18	0.00	0.71	0.66	0.00	0.97
Avail Cap(c_a), veh/h	153	2112	793	146	2093	787	192	0	443	332	0	457
HCM Platoon Ratio	2.00	2.00	2.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	88.4	12.9	12.9	106.1	90.8	91.0	66.7	0.0	75.0	57.3	0.0	81.3
Incr Delay (d2), s/veh	13.7	140.6	163.3	45.9	9.0	19.6	120.0	0.0	5.4	2.2	0.0	34.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	32.5	41.6	9.7	40.1	47.8	15.0	0.0	17.2	7.9	0.0	29.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.2	153.5	176.3	152.0	99.8	110.6	186.7	0.0	80.4	59.5	0.0	115.5
LnGrp LOS	F	F	F	F	F	F	F	A	F	E	A	F
Approach Vol, veh/h		3932			2816			542			621	
Approach Delay, s/veh		158.2			105.1			124.7			98.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.9	103.0	27.3	63.8	25.0	103.9	27.0	64.1
Change Period (Y+Rc), s	6.8	6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	18.2	96.2	25.7	49.7	18.2	96.2	18.7	56.7
Max Q Clear Time (g_c+I1), s	15.1	90.9	18.9	38.1	18.4	99.1	20.7	55.6
Green Ext Time (p_c), s	0.0	4.6	0.1	0.8	0.0	0.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	132.4
HCM 6th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	3245	175	75	2415	55	160	220	180	90	165	10
Future Volume (veh/h)	60	3245	175	75	2415	55	160	220	180	90	165	10
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	63	3416	184	79	2542	58	168	232	189	95	174	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	127	3840	203	204	4361	99	170	385	301	116	353	22
Arrive On Green	0.04	1.00	1.00	0.08	0.67	0.67	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1767	6252	331	1767	6469	147	1189	1884	1469	958	1727	109
Grp Volume(v), veh/h	63	2601	999	79	1880	720	168	216	205	95	0	185
Grp Sat Flow(s),veh/h/ln	1767	1596	1796	1767	1596	1829	1189	1763	1591	958	0	1836
Q Serve(g_s), s	2.5	0.0	0.0	1.8	46.4	46.5	25.4	24.5	25.8	19.2	0.0	19.6
Cycle Q Clear(g_c), s	2.5	0.0	0.0	1.8	46.4	46.5	45.0	24.5	25.8	45.0	0.0	19.6
Prop In Lane	1.00		0.18	1.00		0.08	1.00		0.92	1.00		0.06
Lane Grp Cap(c), veh/h	127	2940	1103	204	3227	1233	170	361	325	116	0	376
V/C Ratio(X)	0.50	0.88	0.91	0.39	0.58	0.58	0.99	0.60	0.63	0.82	0.00	0.49
Avail Cap(c_a), veh/h	233	2940	1103	204	3227	1233	170	361	325	116	0	376
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	0.0	70.5	19.2	19.3	99.6	79.3	79.9	101.6	0.0	77.4
Incr Delay (d2), s/veh	1.1	4.3	12.2	0.4	0.8	2.0	65.5	2.8	3.8	34.8	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.2	3.7	4.2	17.1	20.1	12.9	11.5	11.1	6.7	0.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.5	4.3	12.2	70.9	20.0	21.3	165.1	82.1	83.7	136.4	0.0	78.4
LnGrp LOS	C	A	B	E	C	C	F	F	F	F	A	E
Approach Vol, veh/h		3663			2679			589			280	
Approach Delay, s/veh		6.8			21.9			106.3			98.1	
Approach LOS		A			C			F			F	

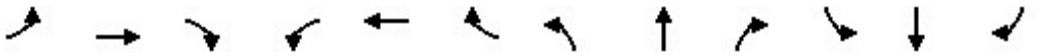
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	155.2		53.0	25.0	142.0		53.0				
Change Period (Y+Rc), s	6.9	6.9		* 8	6.9	6.9		* 8				
Max Green Setting (Gmax), s	18.1	135.1		* 45	18.1	135.1		* 45				
Max Q Clear Time (g_c+I1), s	4.5	48.5		47.0	3.8	2.0		47.0				
Green Ext Time (p_c), s	0.0	27.8		0.0	0.1	75.5		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	24.1	
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)	235	3375	0	0	2365	250	0	0	0	305	0	75
Future Volume (veh/h)	235	3375	0	0	2365	250	0	0	0	305	0	75
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	247	3553	0	0	2489	263	0	0	0	200	169	79
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	246	4957	0	56	3919	411	0	1	1	273	185	86
Arrive On Green	0.08	0.78	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.15	0.15	0.15
Sat Flow, veh/h	1767	6643	0	1767	5912	619	0	1856	1572	1767	1196	559
Grp Volume(v), veh/h	247	3553	0	0	2012	740	0	0	0	200	0	248
Grp Sat Flow(s),veh/h/ln	1767	1596	0	1767	1596	1744	0	1856	1572	1767	0	1755
Q Serve(g_s), s	18.2	61.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.7	0.0	30.6
Cycle Q Clear(g_c), s	18.2	61.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.7	0.0	30.6
Prop In Lane	1.00		0.00	1.00		0.36	0.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	246	4957	0	56	3174	1156	0	1	1	273	0	271
V/C Ratio(X)	1.00	0.72	0.00	0.00	0.63	0.64	0.00	0.00	0.00	0.73	0.00	0.92
Avail Cap(c_a), veh/h	246	4957	0	201	3174	1156	0	123	104	423	0	420
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	88.7	0.0	91.6
Incr Delay (d2), s/veh	58.5	0.9	0.0	0.0	0.1	0.2	0.0	0.0	0.0	3.8	0.0	17.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	20.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	11.3	0.0	15.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.1	13.3	0.0	0.0	0.1	0.2	0.0	0.0	0.0	92.5	0.0	109.3
LnGrp LOS	F	B	A	A	A	A	A	A	A	F	A	F
Approach Vol, veh/h		3800			2752			0			448	
Approach Delay, s/veh		19.8			0.1			0.0			101.8	
Approach LOS		B			A						F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.0	152.6		0.0	0.0	177.6		42.4				
Change Period (Y+Rc), s	6.8	6.8		* 8.4	6.8	6.8		8.4				
Max Green Setting (Gmax), s	18.2	104.2		* 15	18.2	104.2		52.6				
Max Q Clear Time (g_c+I1), s	20.2	2.0		0.0	0.0	63.7		32.6				
Green Ext Time (p_c), s	0.0	33.9		0.0	0.0	36.2		1.3				

Intersection Summary		
HCM 6th Ctrl Delay	17.3	
HCM 6th LOS	B	

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1175	2155	350	225	1645	995	340	970	280	800	1250	630
Future Volume (veh/h)	1175	2155	350	225	1645	995	340	970	280	800	1250	630
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	1237	2268	0	237	1732	0	358	1021	0	842	1316	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	757	2006		266	1280		256	930		707	1112	
Arrive On Green	0.44	0.79	0.00	0.08	0.25	0.00	0.07	0.18	0.00	0.21	0.32	0.00
Sat Flow, veh/h	3428	5066	1572	3428	5066	1572	3428	5066	1572	3428	3526	1572
Grp Volume(v), veh/h	1237	2268	0	237	1732	0	358	1021	0	842	1316	0
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1689	1572	1714	1689	1572	1714	1763	1572
Q Serve(g_s), s	48.6	87.1	0.0	15.1	55.6	0.0	16.4	40.4	0.0	45.4	69.4	0.0
Cycle Q Clear(g_c), s	48.6	87.1	0.0	15.1	55.6	0.0	16.4	40.4	0.0	45.4	69.4	0.0
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	757	2006		266	1280		256	930		707	1112	
V/C Ratio(X)	1.63	1.13		0.89	1.35		1.40	1.10		1.19	1.18	
Avail Cap(c_a), veh/h	757	2006		274	1280		256	930		707	1112	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.00	0.31	0.31	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	61.4	22.9	0.0	100.5	82.2	0.0	101.8	89.8	0.0	87.3	75.3	0.0
Incr Delay (d2), s/veh	288.7	63.3	0.0	10.5	160.5	0.0	202.3	59.9	0.0	99.3	91.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	48.7	29.8	0.0	7.1	43.1	0.0	14.5	22.8	0.0	29.8	45.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	350.1	86.2	0.0	111.0	242.7	0.0	304.1	149.7	0.0	186.6	167.2	0.0
LnGrp LOS	F	F		F	F		F	F		F	F	
Approach Vol, veh/h		3505			1969			1379			2158	
Approach Delay, s/veh		179.4			226.8			189.8			174.7	
Approach LOS		F			F			F			F	

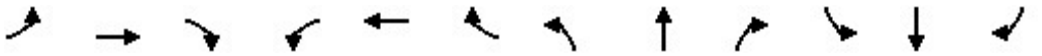
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	56.0	63.0	53.0	48.0	24.5	94.5	24.0	77.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	48.6	55.6	* 45	* 40	17.6	86.6	* 16	* 69
Max Q Clear Time (g_c+I1), s	50.6	57.6	47.4	42.4	17.1	89.1	18.4	71.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	190.2
HCM 6th LOS	F

Notes

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

Unsignalized Delay for [NBR, EBR, 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)	150	2340	740	640	2235	130	485	235	285	50	140	140
Future Volume (veh/h)	150	2340	740	640	2235	130	485	235	285	50	140	140
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	158	2463	0	674	2353	137	379	432	300	53	147	147
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	98	2031		611	2653	823	374	392	1225	116	121	103
Arrive On Green	0.06	0.40	0.00	0.18	0.52	0.52	0.21	0.21	0.21	0.07	0.07	0.07
Sat Flow, veh/h	1767	5066	1572	3428	5066	1572	1767	1856	3145	1767	1856	1572
Grp Volume(v), veh/h	158	2463	0	674	2353	137	379	432	300	53	147	147
Grp Sat Flow(s),veh/h/ln	1767	1689	1572	1714	1689	1572	1767	1856	1572	1767	1856	1572
Q Serve(g_s), s	12.2	88.2	0.0	39.2	90.9	10.0	46.5	46.5	0.0	6.4	14.4	14.4
Cycle Q Clear(g_c), s	12.2	88.2	0.0	39.2	90.9	10.0	46.5	46.5	0.0	6.4	14.4	14.4
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	98	2031		611	2653	823	374	392	1225	116	121	103
V/C Ratio(X)	1.61	1.21		1.10	0.89	0.17	1.01	1.10	0.24	0.46	1.21	1.43
Avail Cap(c_a), veh/h	98	2031		611	2653	823	374	392	1225	116	121	103
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)	0.09	0.09	0.00	0.19	0.19	0.19	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	103.9	65.9	0.0	90.4	46.6	27.3	86.7	86.8	45.3	99.0	102.8	102.8
Incr Delay (d2), s/veh	279.8	96.2	0.0	51.9	1.0	0.1	50.3	75.7	0.1	2.8	148.9	239.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	55.2	0.0	21.6	37.3	3.8	26.3	30.4	5.8	3.1	12.1	12.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	383.7	162.1	0.0	142.3	47.6	27.4	137.1	162.5	45.4	101.9	251.7	342.4
LnGrp LOS	F	F		F	D	C	F	F	D	F	F	F
Approach Vol, veh/h		2621			3164			1111			347	
Approach Delay, s/veh		175.5			66.9			122.2			267.2	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	123.0		54.0	47.0	96.0		23.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 12	* 1.2E2		* 47	* 39	* 88		14.4				
Max Q Clear Time (g_c+I1), s	14.2	92.9		48.5	41.2	90.2		16.4				
Green Ext Time (p_c), s	0.0	14.9		0.0	0.0	0.0		0.0				

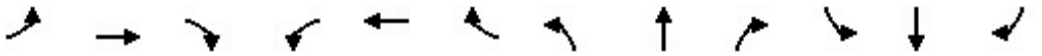
Intersection Summary		
HCM 6th Ctrl Delay		124.3
HCM 6th LOS		F

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.



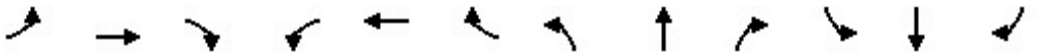
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	2555	25	15	3205	365	5	5	5	190	5	260
Future Volume (veh/h)	200	2555	25	15	3205	365	5	5	5	190	5	260
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	211	2689	26	16	3374	384	5	5	5	200	5	274
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	249	3746	1163	118	3717	1154	22	21	10	91	1	132
Arrive On Green	0.07	0.74	0.74	0.13	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	3428	5066	1572	1767	5066	1572	0	246	123	700	17	1572
Grp Volume(v), veh/h	211	2689	26	16	3374	384	15	0	0	205	0	274
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1767	1689	1572	370	0	0	717	0	1572
Q Serve(g_s), s	13.4	64.8	1.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.5
Cycle Q Clear(g_c), s	13.4	64.8	1.0	1.8	0.0	0.0	18.5	0.0	0.0	18.5	0.0	18.5
Prop In Lane	1.00		1.00	1.00		1.00	0.33		0.33	0.98		1.00
Lane Grp Cap(c), veh/h	249	3746	1163	118	3717	1154	53	0	0	93	0	132
V/C Ratio(X)	0.85	0.72	0.02	0.14	0.91	0.33	0.28	0.00	0.00	2.21	0.00	2.07
Avail Cap(c_a), veh/h	510	3746	1163	118	3717	1154	53	0	0	93	0	132
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	100.8	15.9	7.6	89.7	0.0	0.0	93.6	0.0	0.0	104.0	0.0	100.7
Incr Delay (d2), s/veh	7.8	1.2	0.0	0.0	0.4	0.1	2.9	0.0	0.0	579.1	0.0	507.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	23.6	0.3	0.8	0.1	0.0	0.8	0.0	0.0	20.3	0.0	26.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.7	17.1	7.6	89.7	0.4	0.1	96.4	0.0	0.0	683.1	0.0	608.2
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		2926			3774			15			479	
Approach Delay, s/veh		23.6			0.8			96.4			640.3	
Approach LOS		C			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.3	168.7		28.0	22.0	170.0		28.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 33	* 1.4E2		18.5	* 15	* 1.6E2		18.5				
Max Q Clear Time (g_c+I1), s	15.4	2.0		20.5	3.8	66.8		20.5				
Green Ext Time (p_c), s	0.6	94.9		0.0	0.0	37.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		52.8	
HCM 6th LOS		D	

Notes

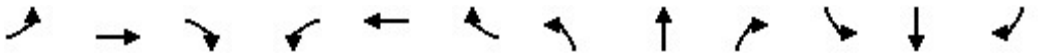
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	2540	110	85	3180	215	165	190	45	265	130	235
Future Volume (veh/h)	95	2540	110	85	3180	215	165	190	45	265	130	235
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	100	2674	116	89	3347	226	174	200	47	279	137	247
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	114	3106	964	136	3168	983	176	302	71	124	385	327
Arrive On Green	0.13	1.00	1.00	0.08	0.63	0.63	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1767	5066	1572	1767	5066	1572	991	1453	341	1124	1856	1572
Grp Volume(v), veh/h	100	2674	116	89	3347	226	174	0	247	279	137	247
Grp Sat Flow(s),veh/h/ln	1767	1689	1572	1767	1689	1572	991	0	1794	1124	1856	1572
Q Serve(g_s), s	12.2	0.0	0.0	10.8	137.6	13.8	31.8	0.0	27.8	17.9	13.9	32.5
Cycle Q Clear(g_c), s	12.2	0.0	0.0	10.8	137.6	13.8	45.7	0.0	27.8	45.7	13.9	32.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	114	3106	964	136	3168	983	176	0	373	124	385	327
V/C Ratio(X)	0.88	0.86	0.12	0.66	1.06	0.23	0.99	0.00	0.66	2.25	0.36	0.76
Avail Cap(c_a), veh/h	120	3106	964	136	3168	983	176	0	373	124	385	327
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.67	0.67	0.67	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	94.9	0.0	0.0	98.7	41.2	18.0	96.9	0.0	80.1	103.4	74.6	81.9
Incr Delay (d2), s/veh	34.4	2.3	0.2	1.0	26.3	0.0	64.2	0.0	4.3	587.3	0.6	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(50%),veh/ln	6.3	0.7	0.0	5.0	61.6	5.1	13.3	0.0	13.5	27.4	6.8	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	129.3	2.3	0.2	99.8	67.5	18.1	161.2	0.0	84.4	690.7	75.1	91.6
LnGrp LOS	F	A	A	F	F	B	F	A	F	F	E	F
Approach Vol, veh/h		2890			3662			421			663	
Approach Delay, s/veh		6.6			65.3			116.1			340.3	
Approach LOS		A			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.3	144.7		54.0	24.0	142.0		54.0				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	14.9	136.9		45.7	16.9	134.9		45.7				
Max Q Clear Time (g_c+I1), s	14.2	139.6		47.7	12.8	2.0		47.7				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	42.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			69.8									
HCM 6th LOS			E									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	565	1925	360	355	2685	235	475	1060	370	320	770	320
Future Volume (veh/h)	565	1925	360	355	2685	235	475	1060	370	320	770	320
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	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	595	2026	379	374	2826	247	500	1116	389	337	811	337
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	309	2596	806	419	2758	856	451	479	406	279	642	341
Arrive On Green	0.18	1.00	1.00	0.12	0.54	0.54	0.09	0.14	0.14	0.08	0.13	0.13
Sat Flow, veh/h	3428	5066	1572	3428	5066	1572	4983	3526	1572	3428	5066	1572
Grp Volume(v), veh/h	595	2026	379	374	2826	247	500	1116	389	337	811	337
Grp Sat Flow(s),veh/h/ln	1714	1689	1572	1714	1689	1572	1661	1763	1572	1714	1689	1572
Q Serve(g_s), s	19.8	0.0	0.0	23.6	119.8	18.7	19.9	29.9	29.9	17.9	27.9	27.9
Cycle Q Clear(g_c), s	19.8	0.0	0.0	23.6	119.8	18.7	19.9	29.9	29.9	17.9	27.9	27.9
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	309	2596	806	419	2758	856	451	479	406	279	642	341
V/C Ratio(X)	1.93	0.78	0.47	0.89	1.02	0.29	1.11	2.33	0.96	1.21	1.26	0.99
Avail Cap(c_a), veh/h	309	2596	806	760	2758	856	451	479	406	279	642	341
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.13	0.13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	90.2	0.0	0.0	95.2	50.1	27.1	100.1	95.0	80.5	101.1	96.1	85.9
Incr Delay (d2), s/veh	419.3	0.3	0.3	6.8	23.7	0.8	75.5	604.6	34.0	122.3	130.3	45.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.0	0.1	0.1	10.9	54.6	7.4	11.7	53.9	25.5	12.8	20.0	23.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	509.5	0.3	0.3	102.0	73.8	27.9	175.6	699.7	114.5	223.4	226.4	131.4
LnGrp LOS	F	A	A	F	F	C	F	F	F	F	F	F
Approach Vol, veh/h		3000			3447			2005			1485	
Approach Delay, s/veh		101.3			73.6			455.4			204.1	
Approach LOS		F			E			F			F	

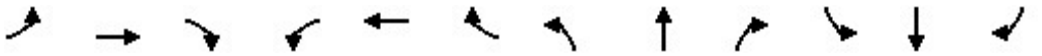
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	128.0	26.0	38.0	35.1	120.9	28.0	36.0
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	19.8	119.8	* 18	* 30	48.8	90.8	* 20	* 28
Max Q Clear Time (g_c+I1), s	21.8	121.8	19.9	31.9	25.6	2.0	21.9	29.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	1.2	42.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	178.5
HCM 6th LOS	F

Notes

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

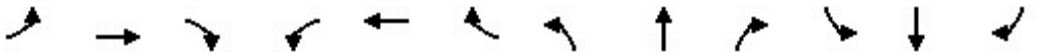
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1090	325	1140	1045	0	0	0	0	460	130	435
Future Volume (vph)	0	1090	325	1140	1045	0	0	0	0	460	130	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (prot)		3505	1568	1595	3309					1665	1704	1568
Flt Permitted		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (perm)		3505	1568	1595	3309					1665	1704	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1147	342	1200	1100	0	0	0	0	484	137	458
RTOR Reduction (vph)	0	0	125	0	0	0	0	0	0	0	0	261
Lane Group Flow (vph)	0	1147	217	744	1556	0	0	0	0	305	316	197
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		37.9	37.9	118.4	118.4					40.4	40.4	40.4
Effective Green, g (s)		37.9	37.9	118.4	118.4					40.4	40.4	40.4
Actuated g/C Ratio		0.17	0.17	0.54	0.54					0.18	0.18	0.18
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		603	270	858	1780					305	312	287
v/s Ratio Prot		c0.33		0.47	c0.47					0.18	c0.19	
v/s Ratio Perm			0.14									0.13
v/c Ratio		1.90	0.80	0.87	0.87					1.00	1.01	0.69
Uniform Delay, d1		91.0	87.5	44.0	44.3					89.8	89.8	83.9
Progression Factor		0.95	0.97	0.28	0.13					1.00	1.00	1.00
Incremental Delay, d2		409.8	10.2	0.9	0.5					51.5	54.2	6.6
Delay (s)		496.3	95.1	13.3	6.3					141.3	144.0	90.5
Level of Service		F	F	B	A					F	F	F
Approach Delay (s)		404.2			8.5			0.0			120.6	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	154.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	107.0%	ICU Level of Service	G
Analysis Period (min)	15		

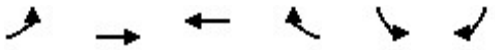
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1355	0	0	1845	560	340	0	1820	0	0	0
Future Volume (vph)	200	1355	0	0	1845	560	340	0	1820	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3482			5036	1568	1665	1358	2854			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3482			5036	1568	1665	1358	2854			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	1426	0	0	1942	589	358	0	1916	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	185	0	279	31	0	0	0
Lane Group Flow (vph)	0	1637	0	0	1942	404	322	370	1272	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		86.4			79.5	79.5	32.4	32.4	118.4			
Effective Green, g (s)		86.4			79.5	79.5	32.4	32.4	118.4			
Actuated g/C Ratio		0.39			0.36	0.36	0.15	0.15	0.54			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1367			1819	566	245	199	1535			
v/s Ratio Prot		c0.47			c0.39		0.19	c0.27	0.45			
v/s Ratio Perm						0.26						
v/c Ratio		1.20			1.07	0.71	1.31	1.86	0.83			
Uniform Delay, d1		66.8			70.2	60.5	93.8	93.8	42.3			
Progression Factor		0.26			0.77	1.10	1.00	1.00	1.00			
Incremental Delay, d2		89.6			35.5	2.9	167.4	405.7	3.8			
Delay (s)		107.1			89.8	69.3	261.2	499.5	46.2			
Level of Service		F			F	E	F	F	D			
Approach Delay (s)		107.1			85.0			206.0			0.0	
Approach LOS		F			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	133.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	117.2%	ICU Level of Service	H
Analysis Period (min)	15		

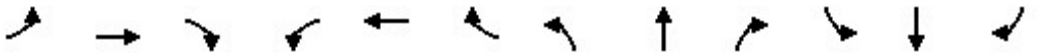
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	290	2385	2650	760	425	355
Future Volume (vph)	290	2385	2650	760	425	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	5036	5036	1568	3400	1568
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	5036	5036	1568	3400	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	305	2511	2789	800	447	374
RTOR Reduction (vph)	0	0	0	105	0	1
Lane Group Flow (vph)	305	2511	2789	695	447	373
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	45.1	175.1	122.1	122.1	27.0	82.1
Effective Green, g (s)	45.1	175.1	122.1	122.1	27.0	82.1
Actuated g/C Ratio	0.21	0.80	0.55	0.55	0.12	0.37
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	697	4008	2794	870	417	585
v/s Ratio Prot	0.09	c0.50	c0.55		c0.13	0.24
v/s Ratio Perm				0.44		
v/c Ratio	0.44	0.63	1.00	0.80	1.07	0.64
Uniform Delay, d1	76.4	9.1	48.8	39.1	96.5	56.7
Progression Factor	1.48	0.59	0.42	0.23	1.00	1.00
Incremental Delay, d2	0.0	0.0	10.4	3.2	64.6	2.3
Delay (s)	113.0	5.4	30.8	12.4	161.1	59.0
Level of Service	F	A	C	B	F	E
Approach Delay (s)		17.1	26.7		114.6	
Approach LOS		B	C		F	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



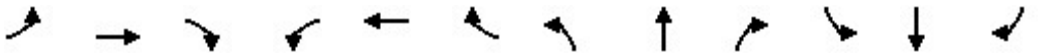
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	260	15	485	330	550	30	1040	735	455	810	35
Future Volume (veh/h)	20	260	15	485	330	550	30	1040	735	455	810	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	20	260	15	485	330	550	30	1040	735	455	810	35
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	80	305	18	556	385	326	39	1862	831	365	2110	91
Arrive On Green	0.04	0.09	0.09	0.05	0.07	0.07	0.02	0.52	0.52	0.10	0.60	0.60
Sat Flow, veh/h	1810	3470	199	3510	1900	1610	1810	3610	1610	3510	3525	152
Grp Volume(v), veh/h	20	135	140	485	330	550	30	1040	735	455	415	430
Grp Sat Flow(s),veh/h/ln	1810	1805	1864	1755	1900	1610	1810	1805	1610	1755	1805	1873
Q Serve(g_s), s	2.3	16.2	16.3	30.2	37.8	35.0	3.6	43.1	89.4	22.9	26.4	26.4
Cycle Q Clear(g_c), s	2.3	16.2	16.3	30.2	37.8	35.0	3.6	43.1	89.4	22.9	26.4	26.4
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	80	159	164	556	385	326	39	1862	831	365	1080	1121
V/C Ratio(X)	0.25	0.85	0.86	0.87	0.86	1.69	0.77	0.56	0.88	1.25	0.38	0.38
Avail Cap(c_a), veh/h	307	307	317	866	470	398	188	1862	831	365	1080	1121
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	0.21	0.21	0.21	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	101.6	98.9	99.0	102.0	99.5	63.4	107.1	36.2	47.4	98.6	23.0	23.0
Incr Delay (d2), s/veh	0.6	11.7	12.0	1.8	3.3	312.3	11.1	1.2	13.3	131.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	8.2	8.6	14.6	19.9	43.6	1.8	19.3	39.2	17.1	11.6	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.2	110.6	110.9	103.8	102.9	375.7	118.2	37.4	60.7	229.9	24.1	24.0
LnGrp LOS	F	F	F	F	F	F	F	D	E	F	C	C
Approach Vol, veh/h		295			1365			1805			1300	
Approach Delay, s/veh		110.2			213.1			48.2			96.1	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	138.6	17.5	52.1	30.0	120.4	42.6	27.0
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 23	76.1	* 37	* 54	* 23	76.1	* 54	* 37
Max Q Clear Time (g_c+I1), s	5.6	28.4	4.3	39.8	24.9	91.4	32.2	18.3
Green Ext Time (p_c), s	0.0	2.5	0.0	4.7	0.0	0.0	2.7	1.0

Intersection Summary	
HCM 6th Ctrl Delay	112.4
HCM 6th LOS	F

Notes

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



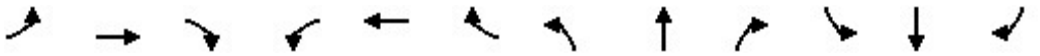
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1990	125	305	2640	505	205	865	455	550	890	375
Future Volume (veh/h)	220	1990	125	305	2640	505	205	865	455	550	890	375
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	220	1990	125	305	2640	505	205	865	455	550	890	375
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	174	2588	163	372	2413	909	238	894	569	349	1009	530
Arrive On Green	0.10	0.82	0.82	0.11	0.47	0.47	0.07	0.25	0.25	0.10	0.28	0.28
Sat Flow, veh/h	3510	6333	398	3510	5187	1610	3510	3610	1610	3510	3610	1610
Grp Volume(v), veh/h	220	1540	575	305	2640	505	205	865	455	550	890	375
Grp Sat Flow(s),veh/h/ln	1755	1634	1828	1755	1729	1610	1755	1805	1610	1755	1805	1610
Q Serve(g_s), s	10.9	34.0	34.0	18.7	102.3	43.8	12.7	52.2	26.7	21.9	51.9	44.8
Cycle Q Clear(g_c), s	10.9	34.0	34.0	18.7	102.3	43.8	12.7	52.2	26.7	21.9	51.9	44.8
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	174	2003	747	372	2413	909	238	894	569	349	1009	530
V/C Ratio(X)	1.26	0.77	0.77	0.82	1.09	0.56	0.86	0.97	0.80	1.57	0.88	0.71
Avail Cap(c_a), veh/h	174	2003	747	372	2413	909	349	901	573	349	1009	530
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.35	0.35	0.35	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	99.1	15.0	15.0	96.3	58.8	30.4	101.5	81.9	39.8	99.1	75.8	64.6
Incr Delay (d2), s/veh	134.5	1.0	2.7	12.7	49.8	2.4	9.7	22.1	7.2	271.7	9.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	6.4	7.5	9.2	54.9	17.6	6.1	26.9	10.8	23.2	25.2	18.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	233.6	16.0	17.7	109.0	108.6	32.8	111.3	104.0	47.1	370.7	84.8	68.3
LnGrp LOS	F	B	B	F	F	C	F	F	D	F	F	E
Approach Vol, veh/h		2335			3450			1525			1815	
Approach Delay, s/veh		36.9			97.6			88.0			168.0	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	109.4	30.0	62.6	30.4	97.0	23.0	69.6
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 11	* 1E2	* 22	* 55	* 23	* 90	* 22	* 55
Max Q Clear Time (g_c+I1), s	12.9	104.3	23.9	54.2	20.7	36.0	14.7	53.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.1	17.0	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	94.5
HCM 6th LOS	F

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)	140	2455	245	155	3350	150	145	260	95	145	205	115
Future Volume (veh/h)	140	2455	245	155	3350	150	145	260	95	145	205	115
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	140	2455	245	155	3350	150	145	260	95	145	205	115
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	202	2990	296	171	3062	135	197	272	99	176	234	132
Arrive On Green	0.11	0.49	0.49	0.06	0.32	0.32	0.07	0.21	0.21	0.07	0.21	0.21
Sat Flow, veh/h	1810	6090	604	1810	6465	286	1810	1328	485	1810	1143	641
Grp Volume(v), veh/h	140	1973	727	155	2529	971	145	0	355	145	0	320
Grp Sat Flow(s),veh/h/ln	1810	1634	1791	1810	1634	1849	1810	0	1813	1810	0	1785
Q Serve(g_s), s	16.4	75.4	76.5	18.7	104.2	104.2	13.8	0.0	42.6	13.8	0.0	38.2
Cycle Q Clear(g_c), s	16.4	75.4	76.5	18.7	104.2	104.2	13.8	0.0	42.6	13.8	0.0	38.2
Prop In Lane	1.00		0.34	1.00		0.15	1.00		0.27	1.00		0.36
Lane Grp Cap(c), veh/h	202	2406	879	171	2322	876	197	0	372	176	0	366
V/C Ratio(X)	0.69	0.82	0.83	0.91	1.09	1.11	0.73	0.00	0.95	0.83	0.00	0.87
Avail Cap(c_a), veh/h	202	2406	879	191	2322	876	229	0	410	207	0	403
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	94.1	47.7	48.0	102.1	75.1	75.1	66.3	0.0	86.4	67.0	0.0	84.7
Incr Delay (d2), s/veh	8.2	3.3	8.8	36.2	48.1	64.7	7.8	0.0	31.7	17.8	0.0	17.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	31.1	35.9	10.7	54.9	66.2	6.9	0.0	23.4	7.4	0.0	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.3	51.0	56.8	138.2	123.2	139.8	74.0	0.0	118.1	84.8	0.0	102.3
LnGrp LOS	F	D	E	F	F	F	E	A	F	F	A	F
Approach Vol, veh/h		2840			3655			500			465	
Approach Delay, s/veh		55.0			128.3			105.3			96.9	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.4	111.0	24.2	53.4	27.6	114.8	24.2	53.4
Change Period (Y+Rc), s	6.8	6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	16.2	104.2	19.7	49.7	23.2	97.2	19.7	49.7
Max Q Clear Time (g_c+I1), s	18.4	106.2	15.8	44.6	20.7	78.5	15.8	40.2
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.0	13.8	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	96.9
HCM 6th LOS	F

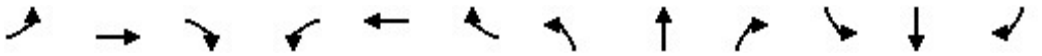
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	2295	215	150	3205	35	120	145	150	100	180	55
Future Volume (veh/h)	70	2295	215	150	3205	35	120	145	150	100	180	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	70	2295	215	150	3205	35	120	145	150	100	180	55
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	114	3317	310	298	4378	48	163	409	365	195	317	97
Arrive On Green	0.01	0.18	0.18	0.27	1.00	1.00	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1810	6127	572	1810	6716	73	1163	1805	1610	1101	1396	427
Grp Volume(v), veh/h	70	1834	676	150	2338	902	120	145	150	100	0	235
Grp Sat Flow(s),veh/h/ln	1810	1634	1797	1810	1634	1887	1163	1805	1610	1101	0	1823
Q Serve(g_s), s	2.9	77.1	77.6	7.6	0.0	0.0	22.5	14.9	17.5	18.7	0.0	25.2
Cycle Q Clear(g_c), s	2.9	77.1	77.6	7.6	0.0	0.0	47.6	14.9	17.5	36.2	0.0	25.2
Prop In Lane	1.00		0.32	1.00		0.04	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	114	2654	973	298	3195	1230	163	409	365	195	0	413
V/C Ratio(X)	0.61	0.69	0.69	0.50	0.73	0.73	0.73	0.35	0.41	0.51	0.00	0.57
Avail Cap(c_a), veh/h	264	2654	973	298	3195	1230	169	418	373	201	0	423
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	73.1	73.3	67.9	0.0	0.0	96.7	71.5	72.5	88.0	0.0	75.5
Incr Delay (d2), s/veh	2.0	1.5	4.1	0.5	1.5	3.9	14.8	0.5	0.7	2.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	34.5	38.9	6.5	0.4	1.3	7.5	7.1	7.4	5.6	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.6	74.6	77.4	68.4	1.5	3.9	111.4	72.1	73.3	90.1	0.0	77.3
LnGrp LOS	B	E	E	E	A	A	F	E	E	F	A	E
Approach Vol, veh/h		2580			3390			415			335	
Approach Delay, s/veh		73.8			5.1			83.9			81.1	
Approach LOS		E			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	150.3		57.9	36.1	126.0		57.9				
Change Period (Y+Rc), s	6.9	6.9		* 8	6.9	6.9		* 8				
Max Green Setting (Gmax), s	23.1	124.1		* 51	28.1	119.1		* 51				
Max Q Clear Time (g_c+I1), s	4.9	2.0		49.6	9.6	79.6		38.2				
Green Ext Time (p_c), s	0.1	53.8		0.2	0.2	20.2		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		40.2	
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)	80	2345	0	0	3365	245	0	0	0	345	0	45
Future Volume (veh/h)	80	2345	0	0	3365	245	0	0	0	345	0	45
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	80	2345	0	0	3365	245	0	0	0	387	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	106	5295	0	160	4748	337	0	1	1	437	230	0
Arrive On Green	0.05	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1810	6802	0	1810	6276	446	0	1900	1610	3619	1900	0
Grp Volume(v), veh/h	80	2345	0	0	2610	1000	0	0	0	387	0	0
Grp Sat Flow(s),veh/h/ln	1810	1634	0	1810	1634	1820	0	1900	1610	1810	1900	0
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.2	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.2	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.25	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	106	5295	0	160	3709	1377	0	1	1	437	230	0
V/C Ratio(X)	0.75	0.44	0.00	0.00	0.70	0.73	0.00	0.00	0.00	0.88	0.00	0.00
Avail Cap(c_a), veh/h	297	5295	0	350	3709	1377	0	126	107	865	454	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)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.2	0.0	0.0
Incr Delay (d2), s/veh	4.0	0.3	0.0	0.0	0.1	0.3	0.0	0.0	0.0	6.1	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	11.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.1	0.3	0.0	0.0	0.1	0.3	0.0	0.0	0.0	101.3	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	A	A	A	F	A	A
Approach Vol, veh/h		2425			3610			0			387	
Approach Delay, s/veh		1.5			0.2			0.0			101.3	
Approach LOS		A			A						F	

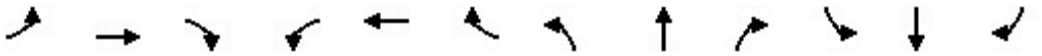
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	173.2		0.0	0.0	185.0		35.0				
Change Period (Y+Rc), s	6.8	6.8		* 8.4	6.8	6.8		8.4				
Max Green Setting (Gmax), s	28.2	94.2		* 15	23.2	99.2		52.6				
Max Q Clear Time (g_c+I1), s	4.3	2.0		0.0	0.0	2.0		25.2				
Green Ext Time (p_c), s	0.1	61.4		0.0	0.0	26.8		1.4				

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	775	1615	305	225	2035	890	500	1020	345	1010	1040	1085
Future Volume (veh/h)	775	1615	305	225	2035	890	500	1020	345	1010	1040	1085
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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	775	1615	0	225	2035	0	500	1020	0	1010	1040	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	329	2217		258	2113		421	599		868	876	
Arrive On Green	0.19	0.85	0.00	0.07	0.41	0.00	0.12	0.12	0.00	0.25	0.24	0.00
Sat Flow, veh/h	3510	5187	1610	3510	5187	1610	3510	5187	1610	3510	3610	1610
Grp Volume(v), veh/h	775	1615	0	225	2035	0	500	1020	0	1010	1040	0
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1755	1729	1610	1755	1729	1610	1755	1805	1610
Q Serve(g_s), s	20.6	26.4	0.0	14.0	84.2	0.0	26.4	25.4	0.0	54.4	53.4	0.0
Cycle Q Clear(g_c), s	20.6	26.4	0.0	14.0	84.2	0.0	26.4	25.4	0.0	54.4	53.4	0.0
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	329	2217		258	2113		421	599		868	876	
V/C Ratio(X)	2.36	0.73		0.87	0.96		1.19	1.70		1.16	1.19	
Avail Cap(c_a), veh/h	329	2217		361	2113		421	599		868	876	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.00	0.25	0.25	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	89.4	11.1	0.0	100.9	63.6	0.0	96.8	97.3	0.0	82.8	83.3	0.0
Incr Delay (d2), s/veh	619.1	1.9	0.0	3.5	4.4	0.0	105.7	323.6	0.0	86.2	95.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	36.9	5.0	0.0	6.5	37.3	0.0	18.2	29.3	0.0	34.9	36.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	708.5	12.9	0.0	104.3	68.0	0.0	202.5	420.9	0.0	169.0	178.9	0.0
LnGrp LOS	F	B		F	E		F	F		F	F	
Approach Vol, veh/h		2390			2260			1520			2050	
Approach Delay, s/veh		238.5			71.6			349.0			174.0	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	97.0	62.0	33.0	23.6	101.4	34.0	61.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	20.6	89.6	* 54	* 25	22.6	87.6	* 26	* 53
Max Q Clear Time (g_c+I1), s	22.6	86.2	56.4	27.4	16.0	28.4	28.4	55.4
Green Ext Time (p_c), s	0.0	2.8	0.0	0.0	0.2	11.5	0.0	0.0

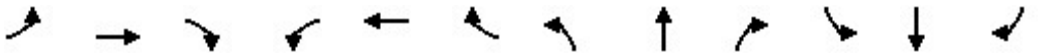
Intersection Summary	
HCM 6th Ctrl Delay	197.0
HCM 6th LOS	F

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, 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)	195	2195	575	210	2345	30	625	125	765	105	230	175
Future Volume (veh/h)	195	2195	575	210	2345	30	625	125	765	105	230	175
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	1870	1856	1856	1900	1841	1885	1841	1900	1767	1781
Adj Flow Rate, veh/h	195	2195	0	210	2345	30	714	0	765	105	230	175
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	1	2	3	3	0	4	1	4	0	9	8
Cap, veh/h	100	2250		424	2560	814	725	0	1031	160	156	133
Arrive On Green	0.06	0.44	0.00	0.16	0.67	0.67	0.21	0.00	0.21	0.09	0.09	0.09
Sat Flow, veh/h	1810	5147	1585	3428	5066	1610	3506	0	3120	1810	1767	1510
Grp Volume(v), veh/h	195	2195	0	210	2345	30	714	0	765	105	230	175
Grp Sat Flow(s),veh/h/ln	1810	1716	1585	1714	1689	1610	1753	0	1560	1810	1767	1510
Q Serve(g_s), s	12.2	92.1	0.0	12.3	86.9	1.4	44.6	0.0	20.7	12.4	19.4	19.4
Cycle Q Clear(g_c), s	12.2	92.1	0.0	12.3	86.9	1.4	44.6	0.0	20.7	12.4	19.4	19.4
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	100	2250		424	2560	814	725	0	1031	160	156	133
V/C Ratio(X)	1.94	0.98		0.50	0.92	0.04	0.98	0.00	0.74	0.66	1.48	1.31
Avail Cap(c_a), veh/h	100	2250		424	2560	814	725	0	1031	160	156	133
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.24	0.24	0.00	0.36	0.36	0.36	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	103.9	60.7	0.0	85.7	32.1	18.1	86.9	0.0	65.3	97.1	100.3	100.3
Incr Delay (d2), s/veh	433.2	5.2	0.0	0.3	2.6	0.0	29.5	0.0	2.9	9.5	245.6	184.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.8	40.1	0.0	5.3	31.1	0.5	23.1	0.0	8.0	6.3	19.7	14.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	537.1	65.9	0.0	86.0	34.6	18.1	116.4	0.0	68.2	106.6	345.9	285.1
LnGrp LOS	F	E		F	C	B	F	A	E	F	F	F
Approach Vol, veh/h		2390			2585			1479			510	
Approach Delay, s/veh		104.4			38.6			91.5			275.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.0	119.0		53.0	35.0	104.0		28.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 12	* 1.1E2		* 46	* 27	* 96		19.4				
Max Q Clear Time (g_c+I1), s	14.2	88.9		46.6	14.3	94.1		21.4				
Green Ext Time (p_c), s	0.0	14.5		0.0	0.5	1.8		0.0				

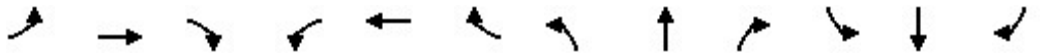
Intersection Summary		
HCM 6th Ctrl Delay		89.8
HCM 6th LOS		F

Notes

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

User approved volume balancing among the lanes for turning movement.

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



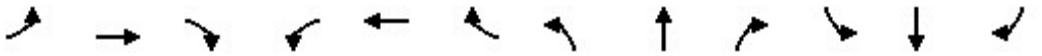
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	3305	15	10	2425	245	5	10	10	280	5	270
Future Volume (veh/h)	195	3305	15	10	2425	245	5	10	10	280	5	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	195	3305	15	10	2425	245	5	10	10	280	5	270
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	171	3304	1025	19	3105	964	20	39	26	128	2	392
Arrive On Green	0.10	1.00	1.00	0.02	1.00	1.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	3510	5187	1610	1810	5187	1610	0	159	106	393	7	1610
Grp Volume(v), veh/h	195	3305	15	10	2425	245	25	0	0	285	0	270
Grp Sat Flow(s),veh/h/ln	1755	1729	1610	1810	1729	1610	264	0	0	400	0	1610
Q Serve(g_s), s	10.7	140.1	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.5
Cycle Q Clear(g_c), s	10.7	140.1	0.0	1.2	0.0	0.0	53.5	0.0	0.0	53.5	0.0	33.5
Prop In Lane	1.00		1.00	1.00		1.00	0.20		0.40	0.98		1.00
Lane Grp Cap(c), veh/h	171	3304	1025	19	3105	964	84	0	0	130	0	392
V/C Ratio(X)	1.14	1.00	0.01	0.53	0.78	0.25	0.30	0.00	0.00	2.20	0.00	0.69
Avail Cap(c_a), veh/h	171	3304	1025	146	3105	964	84	0	0	130	0	392
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)	1.00	1.00	1.00	0.56	0.56	0.56	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	99.3	0.0	0.0	107.2	0.0	0.0	68.6	0.0	0.0	89.9	0.0	75.7
Incr Delay (d2), s/veh	112.2	15.8	0.0	12.4	1.1	0.4	2.0	0.0	0.0	563.3	0.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	4.8	0.0	0.6	0.3	0.1	1.2	0.0	0.0	27.9	0.0	14.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	211.5	15.8	0.0	119.6	1.1	0.4	70.6	0.0	0.0	653.3	0.0	80.8
LnGrp LOS	F	F	A	F	A	A	E	A	A	F	A	F
Approach Vol, veh/h		3515			2680			25			555	
Approach Delay, s/veh		26.6			1.5			70.6			374.8	
Approach LOS		C			A			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.0	139.0		63.0	9.6	147.4		63.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 11	* 1.3E2		53.5	* 18	* 1.2E2		53.5				
Max Q Clear Time (g_c+I1), s	12.7	2.0		55.5	3.2	142.1		55.5				
Green Ext Time (p_c), s	0.0	33.5		0.0	0.0	0.0		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			45.3									
HCM 6th LOS			D									

Notes

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



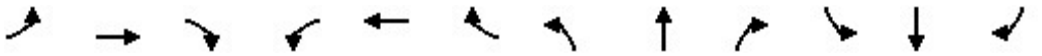
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	3335	110	80	2360	245	135	115	95	310	130	185
Future Volume (veh/h)	150	3335	110	80	2360	245	135	115	95	310	130	185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	150	3335	110	80	2360	245	135	115	95	310	130	185
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	238	3416	1061	73	2945	914	184	191	158	140	377	320
Arrive On Green	0.26	1.00	1.00	0.03	0.38	0.38	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1810	5187	1610	1810	5187	1610	1081	962	795	1190	1900	1610
Grp Volume(v), veh/h	150	3335	110	80	2360	245	135	0	210	310	130	185
Grp Sat Flow(s),veh/h/ln	1810	1729	1610	1810	1729	1610	1081	0	1757	1190	1900	1610
Q Serve(g_s), s	16.1	0.0	0.0	8.9	89.2	23.1	27.0	0.0	23.9	19.8	12.9	22.9
Cycle Q Clear(g_c), s	16.1	0.0	0.0	8.9	89.2	23.1	39.9	0.0	23.9	43.7	12.9	22.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	238	3416	1061	73	2945	914	184	0	349	140	377	320
V/C Ratio(X)	0.63	0.98	0.10	1.09	0.80	0.27	0.73	0.00	0.60	2.22	0.34	0.58
Avail Cap(c_a), veh/h	238	3416	1061	73	2945	914	184	0	349	140	377	320
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.21	0.21	0.21	0.38	0.38	0.38	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.4	0.0	0.0	107.0	57.1	36.6	93.0	0.0	80.2	102.4	75.8	79.8
Incr Delay (d2), s/veh	1.1	3.4	0.0	91.8	0.9	0.3	14.1	0.0	2.9	571.3	0.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	1.1	0.0	6.1	40.2	9.7	8.4	0.0	11.3	30.3	6.5	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.5	3.4	0.0	198.8	58.0	36.9	107.1	0.0	83.1	673.7	76.4	82.4
LnGrp LOS	E	A	A	F	E	D	F	A	F	F	E	F
Approach Vol, veh/h		3595			2685			345			625	
Approach Delay, s/veh		6.4			60.3			92.5			374.4	
Approach LOS		A			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.0	132.0		52.0	16.0	152.0		52.0				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	28.9	124.9		43.7	8.9	144.9		43.7				
Max Q Clear Time (g_c+I1), s	18.1	91.2		41.9	10.9	2.0		45.7				
Green Ext Time (p_c), s	0.2	20.0		0.2	0.0	84.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		62.2	
HCM 6th LOS		E	

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)	605	2675	455	330	1965	175	355	1100	355	410	620	365
Future Volume (veh/h)	605	2675	455	330	1965	175	355	1100	355	410	620	365
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	1826	1870	1870	1870	1841	1870	1856	1870	1870	1885
Adj Flow Rate, veh/h	605	2675	455	330	1965	175	355	1100	355	410	620	365
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	4	5	2	2	2	4	2	3	2	2	1
Cap, veh/h	642	2554	786	358	2176	675	406	564	412	281	807	549
Arrive On Green	0.37	1.00	1.00	0.10	0.43	0.43	0.08	0.16	0.16	0.08	0.16	0.16
Sat Flow, veh/h	3456	5025	1547	3456	5106	1585	4944	3554	1572	3456	5106	1598
Grp Volume(v), veh/h	605	2675	455	330	1965	175	355	1100	355	410	620	365
Grp Sat Flow(s),veh/h/ln	1728	1675	1547	1728	1702	1585	1648	1777	1572	1728	1702	1598
Q Serve(g_s), s	37.3	0.0	0.0	20.8	79.0	15.7	15.6	34.9	34.9	17.9	25.6	34.8
Cycle Q Clear(g_c), s	37.3	0.0	0.0	20.8	79.0	15.7	15.6	34.9	34.9	17.9	25.6	34.8
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	642	2554	786	358	2176	675	406	564	412	281	807	549
V/C Ratio(X)	0.94	1.05	0.58	0.92	0.90	0.26	0.88	1.95	0.86	1.46	0.77	0.66
Avail Cap(c_a), veh/h	767	2554	786	358	2176	675	470	564	412	281	807	549
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.0	0.0	0.0	97.7	58.9	40.7	99.9	92.6	77.3	101.1	88.8	61.4
Incr Delay (d2), s/veh	2.5	22.7	0.3	28.6	6.7	0.9	15.1	434.5	16.7	224.9	4.5	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	5.4	0.1	10.7	34.7	6.4	7.3	50.0	21.0	16.9	11.7	17.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.6	22.7	0.3	126.3	65.6	41.7	115.0	527.1	94.0	325.9	93.3	64.4
LnGrp LOS	E	F	A	F	E	D	F	F	F	F	F	E
Approach Vol, veh/h		3735			2470			1810			1395	
Approach Delay, s/veh		27.7			72.0			361.3			154.1	
Approach LOS		C			E			F			F	

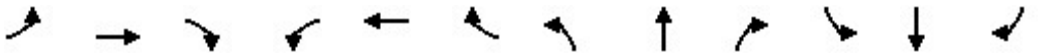
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	49.0	102.0	26.0	43.0	31.0	120.0	26.1	42.9
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	48.8	85.8	* 18	* 35	22.8	111.8	* 21	* 32
Max Q Clear Time (g_c+I1), s	39.3	81.0	19.9	36.9	22.8	2.0	17.6	36.8
Green Ext Time (p_c), s	1.6	4.3	0.0	0.0	0.0	79.2	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	122.2
HCM 6th LOS	F

Notes

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

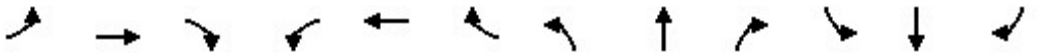
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	980	470	1655	1165	0	0	0	0	470	95	200
Future Volume (vph)	0	980	470	1655	1165	0	0	0	0	470	95	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (prot)		3610	1615	1643	3393					1715	1747	1615
Flt Permitted		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (perm)		3610	1615	1643	3393					1715	1747	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	980	470	1655	1165	0	0	0	0	470	95	200
RTOR Reduction (vph)	0	0	83	0	0	0	0	0	0	0	0	127
Lane Group Flow (vph)	0	980	387	927	1893	0	0	0	0	282	283	73
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		42.9	42.9	124.4	124.4					29.4	29.4	29.4
Effective Green, g (s)		42.9	42.9	124.4	124.4					29.4	29.4	29.4
Actuated g/C Ratio		0.19	0.19	0.57	0.57					0.13	0.13	0.13
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		703	314	929	1918					229	233	215
v/s Ratio Prot		c0.27		c0.56	0.56					c0.16	0.16	
v/s Ratio Perm			0.24									0.04
v/c Ratio		1.39	1.23	1.00	0.99					1.23	1.21	0.34
Uniform Delay, d1		88.5	88.5	47.7	47.0					95.3	95.3	86.5
Progression Factor		0.93	0.91	0.26	0.35					1.00	1.00	1.00
Incremental Delay, d2		183.0	121.7	8.3	3.8					136.1	129.2	0.9
Delay (s)		265.7	202.6	20.7	20.4					231.4	224.5	87.4
Level of Service		F	F	C	C					F	F	F
Approach Delay (s)		245.2			20.5			0.0			191.2	
Approach LOS		F			C			A			F	

Intersection Summary			
HCM 2000 Control Delay	111.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	117.5%	ICU Level of Service	H
Analysis Period (min)	15		

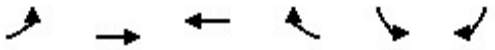
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	1085	0	0	2525	690	295	0	1245	0	0	0
Future Volume (vph)	365	1085	0	0	2525	690	295	0	1245	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3565			5187	1615	1715	1401	2939			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3565			5187	1615	1715	1401	2939			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	365	1085	0	0	2525	690	295	0	1245	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	166	0	217	30	0	0	0
Lane Group Flow (vph)	0	1450	0	0	2525	524	265	211	817	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		80.4			99.5	99.5	18.4	18.4	124.4			
Effective Green, g (s)		80.4			99.5	99.5	18.4	18.4	124.4			
Actuated g/C Ratio		0.37			0.45	0.45	0.08	0.08	0.57			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1302			2345	730	143	117	1661			
v/s Ratio Prot		c0.41			c0.49		c0.15	0.15	0.28			
v/s Ratio Perm						0.32						
v/c Ratio		1.11			1.08	0.72	1.85	1.80	0.49			
Uniform Delay, d1		69.8			60.2	48.9	100.8	100.8	28.8			
Progression Factor		0.30			0.43	0.07	1.00	1.00	1.00			
Incremental Delay, d2		52.3			35.5	0.6	409.5	392.6	0.2			
Delay (s)		73.1			61.1	4.2	510.3	493.4	29.0			
Level of Service		E			E	A	F	F	C			
Approach Delay (s)		73.1			48.9			240.9			0.0	
Approach LOS		E			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	102.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	122.8%	ICU Level of Service	H
Analysis Period (min)	15		

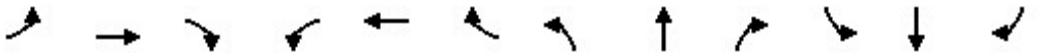
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	335	2730	2265	455	725	315
Future Volume (vph)	335	2730	2265	455	725	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3502	5187	5187	1615	3502	1615
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3502	5187	5187	1615	3502	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	335	2730	2265	455	725	315
RTOR Reduction (vph)	0	0	0	73	0	1
Lane Group Flow (vph)	335	2730	2265	382	725	314
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	45.1	155.2	102.2	102.2	46.9	102.0
Effective Green, g (s)	45.1	155.2	102.2	102.2	46.9	102.0
Actuated g/C Ratio	0.21	0.71	0.46	0.46	0.21	0.46
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	717	3659	2409	750	746	748
v/s Ratio Prot	0.10	c0.53	c0.44		c0.21	0.19
v/s Ratio Perm				0.24		
v/c Ratio	0.47	0.75	0.94	0.51	0.97	0.42
Uniform Delay, d1	76.9	20.1	56.0	41.3	85.9	39.3
Progression Factor	1.40	0.53	0.62	0.64	1.00	1.00
Incremental Delay, d2	0.1	0.3	6.3	1.6	26.0	0.4
Delay (s)	107.9	11.1	41.1	28.1	111.9	39.7
Level of Service	F	B	D	C	F	D
Approach Delay (s)		21.6	38.9		90.0	
Approach LOS		C	D		F	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



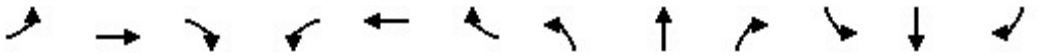
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	305	30	690	250	565	15	725	595	490	1115	45
Future Volume (veh/h)	30	305	30	690	250	565	15	725	595	490	1115	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	305	30	690	250	565	15	725	595	490	1115	45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	272	336	33	746	311	264	24	1331	594	526	1788	72
Arrive On Green	0.16	0.11	0.11	0.07	0.06	0.06	0.01	0.38	0.38	0.16	0.53	0.53
Sat Flow, veh/h	1739	3193	312	3374	1826	1547	1739	3469	1547	3374	3399	137
Grp Volume(v), veh/h	30	165	170	690	250	565	15	725	595	490	569	591
Grp Sat Flow(s),veh/h/ln	1739	1735	1770	1687	1826	1547	1739	1735	1547	1687	1735	1801
Q Serve(g_s), s	3.3	20.7	21.0	44.7	29.8	27.4	1.9	35.8	84.4	31.6	50.9	50.9
Cycle Q Clear(g_c), s	3.3	20.7	21.0	44.7	29.8	27.4	1.9	35.8	84.4	31.6	50.9	50.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	272	183	186	746	311	264	24	1331	594	526	913	948
V/C Ratio(X)	0.11	0.90	0.91	0.92	0.80	2.14	0.63	0.54	1.00	0.93	0.62	0.62
Avail Cap(c_a), veh/h	272	192	196	802	568	481	70	1331	594	581	913	948
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	0.32	0.32	0.32	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.6	97.3	97.4	100.1	100.2	55.5	108.0	52.8	67.8	91.7	36.8	36.8
Incr Delay (d2), s/veh	0.1	37.7	39.9	6.4	2.3	518.8	9.9	1.6	37.4	20.8	3.2	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.3	11.8	21.2	15.0	49.5	0.9	15.9	39.7	15.3	22.3	23.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	135.0	137.4	106.5	102.5	574.3	117.8	54.4	105.2	112.5	40.0	39.9
LnGrp LOS	E	F	F	F	F	F	F	D	F	F	D	D
Approach Vol, veh/h		365			1505			1335			1650	
Approach Delay, s/veh		131.6			281.5			77.7			61.5	
Approach LOS		F			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	122.7	42.2	45.1	41.4	91.3	56.4	30.9
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 8.9	105.1	* 8.3	* 68	* 38	76.1	* 52	* 24
Max Q Clear Time (g_c+I1), s	3.9	52.9	5.3	31.8	33.6	86.4	46.7	23.0
Green Ext Time (p_c), s	0.0	3.9	0.0	5.7	0.8	0.0	1.9	0.2

Intersection Summary	
HCM 6th Ctrl Delay	139.4
HCM 6th LOS	F

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)	370	2560	130	350	1755	440	235	720	250	510	1110	390
Future Volume (veh/h)	370	2560	130	350	1755	440	235	720	250	510	1110	390
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	370	2560	130	350	1755	440	235	720	250	510	1110	390
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	397	2218	689	274	2037	814	198	755	463	397	960	611
Arrive On Green	0.04	0.15	0.15	0.11	0.54	0.54	0.06	0.22	0.22	0.12	0.28	0.28
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	3469	1547	3374	3469	1547
Grp Volume(v), veh/h	370	2560	130	350	1755	440	235	720	250	510	1110	390
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1735	1547	1687	1735	1547
Q Serve(g_s), s	24.1	97.9	12.5	17.9	66.5	36.8	12.9	45.1	8.9	25.9	60.9	44.9
Cycle Q Clear(g_c), s	24.1	97.9	12.5	17.9	66.5	36.8	12.9	45.1	8.9	25.9	60.9	44.9
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	397	2218	689	274	2037	814	198	755	463	397	960	611
V/C Ratio(X)	0.93	1.15	0.19	1.28	0.86	0.54	1.19	0.95	0.54	1.28	1.16	0.64
Avail Cap(c_a), veh/h	397	2218	689	274	2037	814	198	755	463	397	960	611
HCM Platoon Ratio	0.33	0.33	0.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	104.8	93.8	35.0	98.1	44.9	25.8	103.6	84.9	35.3	97.1	79.6	53.9
Incr Delay (d2), s/veh	10.1	70.8	0.2	149.0	5.1	2.6	123.9	21.8	0.7	145.8	82.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.6	58.8	5.2	13.3	26.4	13.0	9.1	22.4	7.7	19.4	37.9	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	115.0	164.7	35.1	247.1	50.0	28.3	227.4	106.7	36.0	242.9	161.6	55.6
LnGrp LOS	F	F	D	F	D	C	F	F	D	F	F	E
Approach Vol, veh/h		3060			2545			1205			2010	
Approach Delay, s/veh		153.2			73.3			115.6			161.6	
Approach LOS		F			E			F			F	

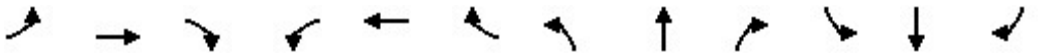
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	97.0	34.0	56.0	25.0	105.0	21.0	69.0
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 26	* 90	* 26	* 48	* 18	* 98	* 13	* 61
Max Q Clear Time (g_c+I1), s	26.1	68.5	27.9	47.1	19.9	99.9	14.9	62.9
Green Ext Time (p_c), s	0.0	12.0	0.0	0.3	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	126.9
HCM 6th LOS	F

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)	100	2680	400	125	2150	125	225	205	415	175	315	100
Future Volume (veh/h)	100	2680	400	125	2150	125	225	205	415	175	315	100
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	100	2680	400	125	2150	125	225	205	415	175	315	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	128	2610	810	73	3009	175	188	124	251	149	276	88
Arrive On Green	0.15	1.00	1.00	0.01	0.16	0.16	0.09	0.23	0.23	0.07	0.21	0.21
Sat Flow, veh/h	1739	4985	1547	1739	6117	355	1739	539	1091	1739	1328	422
Grp Volume(v), veh/h	100	2680	400	125	1655	620	225	0	620	175	0	415
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1570	1762	1739	0	1630	1739	0	1750
Q Serve(g_s), s	12.2	115.2	0.0	9.2	73.3	73.3	19.7	0.0	50.7	14.7	0.0	45.7
Cycle Q Clear(g_c), s	12.2	115.2	0.0	9.2	73.3	73.3	19.7	0.0	50.7	14.7	0.0	45.7
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.67	1.00		0.24
Lane Grp Cap(c), veh/h	128	2610	810	73	2317	867	188	0	376	149	0	364
V/C Ratio(X)	0.78	1.03	0.49	1.72	0.71	0.72	1.19	0.00	1.65	1.18	0.00	1.14
Avail Cap(c_a), veh/h	134	2610	810	73	2317	867	188	0	376	149	0	364
HCM Platoon Ratio	2.00	2.00	2.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	92.1	0.0	0.0	108.5	77.5	77.5	71.6	0.0	84.7	67.1	0.0	87.2
Incr Delay (d2), s/veh	24.1	24.9	2.1	374.6	1.9	5.0	127.5	0.0	304.6	128.5	0.0	91.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	6.0	0.5	11.9	31.6	36.2	15.1	0.0	53.3	11.8	0.0	30.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	116.2	24.9	2.1	483.1	79.4	82.6	199.1	0.0	389.3	195.6	0.0	178.7
LnGrp LOS	F	F	A	F	E	F	F	A	F	F	A	F
Approach Vol, veh/h		3180			2400			845			590	
Approach Delay, s/veh		24.9			101.3			338.6			183.7	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	115.0	23.0	59.0	16.0	122.0	28.0	54.0
Change Period (Y+Rc), s	6.8	* 6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	17.0	* 1.1E2	14.7	50.7	9.2	115.2	19.7	45.7
Max Q Clear Time (g_c+I1), s	14.2	75.3	16.7	52.7	11.2	117.2	21.7	47.7
Green Ext Time (p_c), s	0.0	15.9	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	102.2
HCM 6th LOS	F

Notes

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

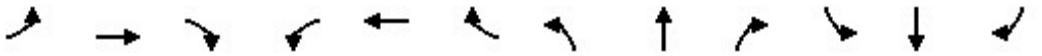
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	2100	995	80	2145	50	365	295	840	80	175	10
Future Volume (veh/h)	50	2100	995	80	2145	50	365	295	840	80	175	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	50	2100	995	80	2145	50	365	295	840	80	175	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	83	2245	697	101	2313	718	439	717	640	33	708	40
Arrive On Green	0.03	0.60	0.60	0.04	0.46	0.46	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	1170	1735	1547	484	1711	98
Grp Volume(v), veh/h	50	2100	995	80	2145	50	365	295	840	80	0	185
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	1170	1735	1547	484	0	1808
Q Serve(g_s), s	3.3	84.5	99.1	5.3	89.1	3.9	65.1	26.4	91.0	0.0	0.0	14.7
Cycle Q Clear(g_c), s	3.3	84.5	99.1	5.3	89.1	3.9	79.8	26.4	91.0	91.0	0.0	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	83	2245	697	101	2313	718	439	717	640	33	0	748
V/C Ratio(X)	0.60	0.94	1.43	0.79	0.93	0.07	0.83	0.41	1.31	2.44	0.00	0.25
Avail Cap(c_a), veh/h	107	2245	697	101	2313	718	439	717	640	33	0	748
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.7	41.2	44.1	102.9	55.5	32.6	68.2	45.6	64.5	110.0	0.0	42.1
Incr Delay (d2), s/veh	2.6	8.9	200.6	30.7	8.0	0.2	12.8	0.4	151.5	732.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	33.3	73.2	5.4	38.4	1.5	21.2	11.8	62.9	8.6	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	50.0	244.7	133.6	63.4	32.8	81.0	45.9	216.0	842.6	0.0	42.3
LnGrp LOS	D	D	F	F	E	C	F	D	F	F	A	D
Approach Vol, veh/h		3145			2275			1500			265	
Approach Delay, s/veh		111.7			65.2			149.7			283.9	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	109.0		99.0	15.0	106.0		99.0				
Change Period (Y+Rc), s	6.9	6.9		* 8	6.9	6.9		* 8				
Max Green Setting (Gmax), s	8.1	99.1		* 91	8.1	99.1		* 91				
Max Q Clear Time (g_c+I1), s	5.3	91.1		93.0	7.3	101.1		93.0				
Green Ext Time (p_c), s	0.0	6.2		0.0	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		111.3
HCM 6th LOS		F

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)	235	2865	0	0	2080	215	0	0	0	285	0	75
Future Volume (veh/h)	235	2865	0	0	2080	215	0	0	0	285	0	75
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	235	2865	0	0	2080	215	0	0	0	180	147	75
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	251	4976	0	88	3485	1082	0	1	1	241	158	81
Arrive On Green	0.06	0.79	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1739	6537	0	1739	4985	1547	0	1826	1547	1739	1140	581
Grp Volume(v), veh/h	235	2865	0	0	2080	215	0	0	0	180	0	222
Grp Sat Flow(s),veh/h/ln	1739	1570	0	1739	1662	1547	0	1826	1547	1739	0	1721
Q Serve(g_s), s	11.4	38.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9	0.0	28.1
Cycle Q Clear(g_c), s	11.4	38.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.9	0.0	28.1
Prop In Lane	1.00		0.00	1.00		1.00	0.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	251	4976	0	88	3485	1082	0	1	1	241	0	239
V/C Ratio(X)	0.94	0.58	0.00	0.00	0.60	0.20	0.00	0.00	0.00	0.75	0.00	0.93
Avail Cap(c_a), veh/h	413	4976	0	182	3485	1082	0	138	117	266	0	263
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.23	0.23	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	91.0	0.0	93.7
Incr Delay (d2), s/veh	14.7	0.5	0.0	0.0	0.2	0.1	0.0	0.0	0.0	10.0	0.0	35.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	12.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	10.7	0.0	15.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	9.2	0.0	0.0	0.2	0.1	0.0	0.0	0.0	101.0	0.0	129.1
LnGrp LOS	D	A	A	A	A	A	A	A	A	F	A	F
Approach Vol, veh/h		3100			2295			0			402	
Approach Delay, s/veh		12.0			0.2			0.0			116.5	
Approach LOS		B			A						F	

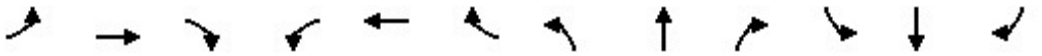
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.5	160.6		0.0	0.0	181.1		38.9				
Change Period (Y+Rc), s	6.8	6.8		* 8.4	6.8	6.8		8.4				
Max Green Setting (Gmax), s	34.2	105.2		* 17	12.0	127.4		33.6				
Max Q Clear Time (g_c+I1), s	13.4	2.0		0.0	0.0	40.4		30.1				
Green Ext Time (p_c), s	0.3	22.9		0.0	0.0	44.5		0.5				

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

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	920	1905	325	225	1530	1120	290	1020	265	900	1290	480
Future Volume (veh/h)	920	1905	325	225	1530	1120	290	1020	265	900	1290	480
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	920	1905	0	225	1530	0	290	1020	0	900	1290	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	561	2213		254	1758		205	915		543	984	
Arrive On Green	0.33	0.89	0.00	0.08	0.35	0.00	0.06	0.18	0.00	0.16	0.28	0.00
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	4985	1547	3374	3469	1547
Grp Volume(v), veh/h	920	1905	0	225	1530	0	290	1020	0	900	1290	0
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1662	1547	1687	1735	1547
Q Serve(g_s), s	36.6	40.0	0.0	14.5	63.1	0.0	13.4	40.4	0.0	35.4	62.4	0.0
Cycle Q Clear(g_c), s	36.6	40.0	0.0	14.5	63.1	0.0	13.4	40.4	0.0	35.4	62.4	0.0
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	561	2213		254	1758		205	915		543	984	
V/C Ratio(X)	1.64	0.86		0.89	0.87		1.41	1.11		1.66	1.31	
Avail Cap(c_a), veh/h	561	2213		255	1758		205	915		543	984	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.78	0.00	0.41	0.41	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.4	9.1	0.0	100.8	66.5	0.0	103.3	89.8	0.0	92.3	78.8	0.0
Incr Delay (d2), s/veh	293.9	3.7	0.0	14.1	2.7	0.0	211.4	66.3	0.0	304.2	147.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	37.1	5.0	0.0	6.9	26.9	0.0	11.9	22.9	0.0	38.4	47.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	367.3	12.8	0.0	114.9	69.2	0.0	314.7	156.1	0.0	396.5	226.1	0.0
LnGrp LOS	F	B		F	E		F	F		F	F	
Approach Vol, veh/h		2825			1755			1310			2190	
Approach Delay, s/veh		128.3			75.0			191.2			296.1	
Approach LOS		F			E			F			F	

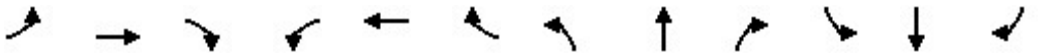
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.0	85.0	43.0	48.0	23.9	105.1	21.0	70.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	36.6	77.6	* 35	* 40	16.6	97.6	* 13	* 62
Max Q Clear Time (g_c+I1), s	38.6	65.1	37.4	42.4	16.5	42.0	15.4	64.4
Green Ext Time (p_c), s	0.0	6.4	0.0	0.0	0.0	15.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	172.4
HCM 6th LOS	F

Notes

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

Unsignalized Delay for [NBR, EBR, 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)	140	2175	760	665	2220	130	510	235	290	50	140	140
Future Volume (veh/h)	140	2175	760	665	2220	130	510	235	290	50	140	140
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	140	2175	0	665	2220	130	510	235	290	50	140	140
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	152	2066		680	2636	818	573	310	1011	122	128	108
Arrive On Green	0.09	0.41	0.00	0.27	0.70	0.70	0.17	0.17	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1739	4985	1547	3374	4985	1547	3374	1826	2723	1739	1826	1547
Grp Volume(v), veh/h	140	2175	0	665	2220	130	510	235	290	50	140	140
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1687	1662	1547	1687	1826	1362	1739	1826	1547
Q Serve(g_s), s	17.6	91.2	0.0	43.0	71.3	6.2	32.5	27.0	0.0	6.1	15.4	15.4
Cycle Q Clear(g_c), s	17.6	91.2	0.0	43.0	71.3	6.2	32.5	27.0	0.0	6.1	15.4	15.4
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	152	2066		680	2636	818	573	310	1011	122	128	108
V/C Ratio(X)	0.92	1.05		0.98	0.84	0.16	0.89	0.76	0.29	0.41	1.10	1.29
Avail Cap(c_a), veh/h	152	2066		680	2636	818	682	369	1100	122	128	108
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.36	0.36	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	99.7	64.4	0.0	80.0	26.0	16.3	89.3	87.0	48.7	98.0	102.3	102.3
Incr Delay (d2), s/veh	8.7	25.1	0.0	15.8	1.3	0.1	12.3	7.3	0.2	2.2	107.5	184.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	42.4	0.0	19.4	24.1	2.2	15.1	13.4	5.8	2.9	11.3	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.4	89.5	0.0	95.8	27.2	16.4	101.6	94.3	48.8	100.2	209.8	286.4
LnGrp LOS	F	F		F	C	B	F	F	D	F	F	F
Approach Vol, veh/h		2315			3015			1035			330	
Approach Delay, s/veh		90.7			41.9			85.2			225.7	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	124.1		44.9	52.1	99.0		24.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 19	* 1.1E2		* 45	* 37	* 91		15.4				
Max Q Clear Time (g_c+I1), s	19.6	73.3		34.5	45.0	93.2		17.4				
Green Ext Time (p_c), s	0.0	18.3		2.8	0.0	0.0		0.0				

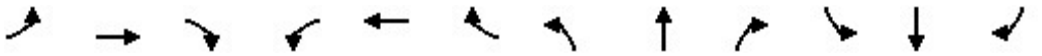
Intersection Summary		
HCM 6th Ctrl Delay		74.5
HCM 6th LOS		E

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 [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)	190	2380	25	15	3210	375	5	5	5	180	5	250
Future Volume (veh/h)	190	2380	25	15	3210	375	5	5	5	180	5	250
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	190	2380	25	15	3210	375	5	5	5	180	5	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	210	3528	1095	69	3415	1060	22	21	10	121	2	222
Arrive On Green	0.06	0.71	0.71	0.08	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	3374	4985	1547	1739	4985	1547	0	146	73	621	17	1547
Grp Volume(v), veh/h	190	2380	25	15	3210	375	15	0	0	185	0	250
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1739	1662	1547	218	0	0	638	0	1547
Q Serve(g_s), s	12.3	58.8	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Cycle Q Clear(g_c), s	12.3	58.8	1.1	1.8	0.0	0.0	31.5	0.0	0.0	31.5	0.0	31.5
Prop In Lane	1.00		1.00	1.00		1.00	0.33		0.33	0.97		1.00
Lane Grp Cap(c), veh/h	210	3528	1095	69	3415	1060	53	0	0	124	0	222
V/C Ratio(X)	0.90	0.67	0.02	0.22	0.94	0.35	0.28	0.00	0.00	1.50	0.00	1.13
Avail Cap(c_a), veh/h	210	3528	1095	69	3415	1060	53	0	0	124	0	222
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.17	0.17	0.17	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	102.5	18.0	9.6	98.1	0.0	0.0	83.2	0.0	0.0	98.4	0.0	94.3
Incr Delay (d2), s/veh	37.0	1.1	0.0	0.3	1.3	0.2	2.9	0.0	0.0	260.9	0.0	99.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	21.7	0.4	0.8	0.4	0.0	0.8	0.0	0.0	16.2	0.0	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.5	19.0	9.6	98.4	1.3	0.2	86.0	0.0	0.0	359.3	0.0	193.6
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		2595			3600			15			435	
Approach Delay, s/veh		27.8			1.6			86.0			264.0	
Approach LOS		C			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.0	158.0		41.0	16.0	163.0		41.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 14	* 1.5E2		31.5	* 8.7	* 1.6E2		31.5				
Max Q Clear Time (g_c+I1), s	14.3	2.0		33.5	3.8	60.8		33.5				
Green Ext Time (p_c), s	0.0	85.8		0.0	0.0	27.3		0.0				

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

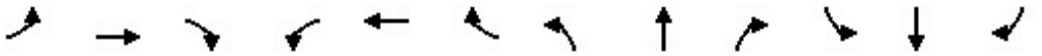
Notes

* 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)	85	2400	80	85	3230	210	130	185	50	270	130	235
Future Volume (veh/h)	85	2400	80	85	3230	210	130	185	50	270	130	235
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	85	2400	80	85	3230	210	130	185	50	270	130	235
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	70	2671	829	252	3192	991	188	300	81	274	396	335
Arrive On Green	0.08	1.00	1.00	0.29	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	993	1384	374	2169	1826	1547
Grp Volume(v), veh/h	85	2400	80	85	3230	210	130	0	235	270	130	235
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	993	0	1759	1085	1826	1547
Q Serve(g_s), s	8.9	0.0	0.0	8.5	140.9	0.0	28.0	0.0	26.6	21.1	13.2	30.9
Cycle Q Clear(g_c), s	8.9	0.0	0.0	8.5	140.9	0.0	41.2	0.0	26.6	47.7	13.2	30.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	70	2671	829	252	3192	991	188	0	381	274	396	335
V/C Ratio(X)	1.21	0.90	0.10	0.34	1.01	0.21	0.69	0.00	0.62	0.99	0.33	0.70
Avail Cap(c_a), veh/h	70	2671	829	252	3192	991	188	0	381	274	396	335
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)	0.71	0.71	0.71	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	101.1	0.0	0.0	69.8	0.0	0.0	90.0	0.0	77.9	101.9	72.6	79.6
Incr Delay (d2), s/veh	156.7	3.9	0.2	0.1	8.1	0.0	10.2	0.0	3.0	50.5	0.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	1.0	0.0	3.6	2.4	0.0	7.8	0.0	12.5	9.7	6.3	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	257.8	3.9	0.2	69.9	8.1	0.0	100.2	0.0	80.8	152.3	73.1	85.9
LnGrp LOS	F	A	A	E	F	A	F	A	F	F	E	F
Approach Vol, veh/h		2565			3525			365			635	
Approach Delay, s/veh		12.2			9.1			87.7			111.5	
Approach LOS		B			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	148.0		56.0	39.0	125.0		56.0				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	8.9	140.9		47.7	31.9	117.9		47.7				
Max Q Clear Time (g_c+I1), s	10.9	142.9		43.2	10.5	2.0		49.7				
Green Ext Time (p_c), s	0.0	0.0		0.6	0.2	29.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		23.5	
HCM 6th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	1865	310	355	2700	240	475	1055	305	320	765	350
Future Volume (veh/h)	550	1865	310	355	2700	240	475	1055	305	320	765	350
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	550	1865	310	355	2700	240	475	1055	305	320	765	350
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	426	2185	678	386	2125	660	523	787	528	244	960	493
Arrive On Green	0.25	0.88	0.88	0.11	0.43	0.43	0.11	0.23	0.23	0.07	0.19	0.19
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	4904	3469	1547	3374	4985	1547
Grp Volume(v), veh/h	550	1865	310	355	2700	240	475	1055	305	320	765	350
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1635	1735	1547	1687	1662	1547
Q Serve(g_s), s	27.8	40.3	9.1	22.9	93.8	23.2	21.1	49.9	35.6	15.9	32.2	42.3
Cycle Q Clear(g_c), s	27.8	40.3	9.1	22.9	93.8	23.2	21.1	49.9	35.6	15.9	32.2	42.3
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	426	2185	678	386	2125	660	523	787	528	244	960	493
V/C Ratio(X)	1.29	0.85	0.46	0.92	1.27	0.36	0.91	1.34	0.58	1.31	0.80	0.71
Avail Cap(c_a), veh/h	426	2185	678	411	2125	660	555	787	528	244	960	493
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.2	10.1	8.2	96.4	63.1	42.8	97.2	85.1	59.5	102.0	84.7	66.0
Incr Delay (d2), s/veh	136.2	1.5	0.7	24.9	125.5	1.6	18.3	161.9	1.6	166.8	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	4.8	2.3	11.3	63.3	9.3	9.8	39.9	14.3	12.7	14.3	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	218.4	11.6	8.9	121.3	188.6	44.4	115.6	246.9	61.0	268.8	89.5	70.6
LnGrp LOS	F	B	A	F	F	D	F	F	E	F	F	E
Approach Vol, veh/h		2725			3295			1835			1435	
Approach Delay, s/veh		53.0			170.9			182.0			124.9	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.0	102.0	24.0	58.0	33.4	104.6	31.6	50.4
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	27.8	93.8	* 16	* 50	26.8	94.8	* 25	* 41
Max Q Clear Time (g_c+I1), s	29.8	95.8	17.9	51.9	24.9	42.3	23.1	44.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.3	28.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	131.4
HCM 6th LOS	F

Notes

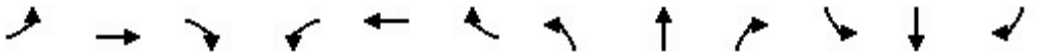
User approved pedestrian interval to be less than phase max green.

* 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 (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
Future Volume (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (prot)		3438	1538	1564	3251					1633	1673	1538
Flt Permitted		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (perm)		3438	1538	1564	3251					1633	1673	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
RTOR Reduction (vph)	0	0	95	0	0	0	0	0	0	0	0	267
Lane Group Flow (vph)	0	1060	235	715	1465	0	0	0	0	278	287	158
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		54.9	54.9	109.4	109.4					32.4	32.4	32.4
Effective Green, g (s)		54.9	54.9	109.4	109.4					32.4	32.4	32.4
Actuated g/C Ratio		0.25	0.25	0.50	0.50					0.15	0.15	0.15
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		857	383	777	1616					240	246	226
v/s Ratio Prot		c0.31		c0.46	0.45					0.17	c0.17	
v/s Ratio Perm			0.15									0.10
v/c Ratio		1.24	0.61	0.92	0.91					1.16	1.17	0.70
Uniform Delay, d1		82.5	73.2	51.3	50.6					93.8	93.8	89.2
Progression Factor		1.18	1.38	0.34	0.13					1.00	1.00	1.00
Incremental Delay, d2		112.2	1.6	2.0	0.8					107.6	109.9	9.1
Delay (s)		209.5	102.5	19.3	7.2					201.4	203.7	98.3
Level of Service		F	F	B	A					F	F	F
Approach Delay (s)		184.1			11.1			0.0			157.8	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	95.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		

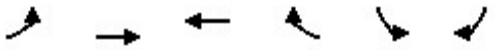
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
Future Volume (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3415			4940	1538	1633	1332	2799			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3415			4940	1538	1633	1332	2799			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	271	34	0	0	0
Lane Group Flow (vph)	0	1495	0	0	1840	358	306	326	1163	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		95.4			67.5	67.5	35.4	35.4	109.4			
Effective Green, g (s)		95.4			67.5	67.5	35.4	35.4	109.4			
Actuated g/C Ratio		0.43			0.31	0.31	0.16	0.16	0.50			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1480			1515	471	262	214	1391			
v/s Ratio Prot		c0.44			c0.37		0.19	c0.24	0.42			
v/s Ratio Perm						0.23						
v/c Ratio		1.01			1.21	0.76	1.17	1.52	0.84			
Uniform Delay, d1		62.3			76.2	68.9	92.3	92.3	47.6			
Progression Factor		0.14			0.68	0.62	1.00	1.00	1.00			
Incremental Delay, d2		9.7			99.8	5.8	108.8	257.8	4.5			
Delay (s)		18.5			151.7	48.7	201.1	350.1	52.1			
Level of Service		B			F	D	F	F	D			
Approach Delay (s)		18.5			128.5			158.5			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	111.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

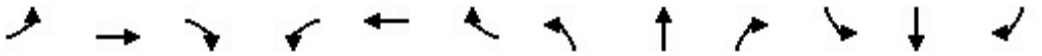
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	280	2235	2660	770	410	355
Future Volume (vph)	280	2235	2660	770	410	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	4940	4940	1538	3335	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	4940	4940	1538	3335	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	280	2235	2660	770	410	355
RTOR Reduction (vph)	0	0	0	106	0	1
Lane Group Flow (vph)	280	2235	2660	664	410	354
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	28.1	168.1	132.1	132.1	34.0	72.1
Effective Green, g (s)	28.1	168.1	132.1	132.1	34.0	72.1
Actuated g/C Ratio	0.13	0.76	0.60	0.60	0.15	0.33
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	425	3774	2966	923	515	504
v/s Ratio Prot	0.08	0.45	c0.54		0.12	c0.23
v/s Ratio Perm				0.43		
v/c Ratio	0.66	0.59	0.90	0.72	0.80	0.70
Uniform Delay, d1	91.4	11.2	38.1	30.9	89.7	64.6
Progression Factor	1.42	0.12	0.65	0.56	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.9	1.9	8.3	4.4
Delay (s)	131.1	1.4	26.7	19.3	98.0	69.0
Level of Service	F	A	C	B	F	E
Approach Delay (s)		15.9	25.1		84.5	
Approach LOS		B	C		F	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	255	10	505	295	570	35	1055	725	460	815	30
Future Volume (veh/h)	20	255	10	505	295	570	35	1055	725	460	815	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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	20	255	10	505	295	570	35	1055	725	460	815	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	28	403	16	549	485	411	116	1405	627	608	1770	65
Arrive On Green	0.02	0.12	0.12	0.27	0.44	0.44	0.07	0.41	0.41	0.18	0.52	0.52
Sat Flow, veh/h	1739	3404	133	3374	1826	1547	1739	3469	1547	3374	3412	126
Grp Volume(v), veh/h	20	130	135	505	295	570	35	1055	725	460	414	431
Grp Sat Flow(s),veh/h/ln	1739	1735	1802	1687	1826	1547	1739	1735	1547	1687	1735	1803
Q Serve(g_s), s	2.5	15.7	15.8	32.0	27.1	58.4	4.2	57.2	54.8	28.5	33.2	33.2
Cycle Q Clear(g_c), s	2.5	15.7	15.8	32.0	27.1	58.4	4.2	57.2	54.8	28.5	33.2	33.2
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	28	205	213	549	485	411	116	1405	627	608	900	935
V/C Ratio(X)	0.72	0.63	0.64	0.92	0.61	1.39	0.30	0.75	1.16	0.76	0.46	0.46
Avail Cap(c_a), veh/h	66	205	213	649	485	411	116	1405	627	608	900	935
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	107.7	92.4	92.5	78.7	52.5	61.2	97.8	56.0	24.8	85.6	33.5	33.5
Incr Delay (d2), s/veh	12.0	6.1	6.1	2.2	0.2	175.9	0.5	3.7	87.7	5.4	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.5	7.8	13.3	11.5	41.6	1.9	25.6	35.8	12.8	14.5	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.8	98.5	98.5	80.9	52.8	237.1	98.3	59.7	112.4	91.0	35.2	35.1
LnGrp LOS	F	F	F	F	D	F	F	E	F	F	D	D
Approach Vol, veh/h		285			1370			1815			1305	
Approach Delay, s/veh		100.0			139.8			81.5			54.8	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	121.0	11.2	66.0	46.8	96.0	43.5	33.7
Change Period (Y+Rc), s	7.1	* 6.9	* 7.7	* 7.6	7.1	* 6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	9.9	* 1.1E2	* 8.3	* 58	34.9	* 89	* 42	* 24
Max Q Clear Time (g_c+I1), s	6.2	35.2	4.5	60.4	30.5	59.2	34.0	17.8
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.7	8.3	1.8	0.6

Intersection Summary	
HCM 6th Ctrl Delay	92.1
HCM 6th LOS	F

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)	305	1905	140	270	2405	435	220	885	325	505	885	505
Future Volume (veh/h)	305	1905	140	270	2405	435	220	885	325	505	885	505
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	305	1905	140	270	2405	435	220	885	325	505	885	505
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	259	2128	660	290	2173	864	228	787	484	412	976	554
Arrive On Green	0.00	0.57	0.57	0.11	0.58	0.58	0.07	0.23	0.23	0.12	0.28	0.28
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	3469	1547	3374	3469	1547
Grp Volume(v), veh/h	305	1905	140	270	2405	435	220	885	325	505	885	505
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1735	1547	1687	1735	1547
Q Serve(g_s), s	16.9	73.9	7.4	17.5	95.9	32.5	14.3	49.9	17.3	26.9	54.1	61.9
Cycle Q Clear(g_c), s	16.9	73.9	7.4	17.5	95.9	32.5	14.3	49.9	17.3	26.9	54.1	61.9
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	259	2128	660	290	2173	864	228	787	484	412	976	554
V/C Ratio(X)	1.18	0.90	0.21	0.93	1.11	0.50	0.96	1.12	0.67	1.22	0.91	0.91
Avail Cap(c_a), veh/h	259	2128	660	290	2173	864	228	787	484	412	976	554
HCM Platoon Ratio	0.00	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	110.0	43.2	17.0	96.8	46.2	21.3	102.3	85.1	38.9	96.6	76.3	67.3
Incr Delay (d2), s/veh	94.1	2.5	0.3	34.7	55.5	2.1	48.7	72.2	3.0	120.8	11.6	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	28.9	3.5	8.9	47.3	11.2	7.8	30.1	6.3	18.7	25.5	29.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	204.1	45.8	17.3	131.5	101.7	23.4	150.9	157.2	41.9	217.4	87.9	86.2
LnGrp LOS	F	D	B	F	F	C	F	F	D	F	F	F
Approach Vol, veh/h		2350			3110			1430			1895	
Approach Delay, s/veh		64.6			93.4			130.0			121.9	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	103.0	35.0	58.0	26.0	101.0	23.0	70.0
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 17	* 96	* 27	* 50	* 19	* 94	* 15	* 62
Max Q Clear Time (g_c+I1), s	18.9	97.9	28.9	51.9	19.5	75.9	16.3	63.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	97.8
HCM 6th LOS	F

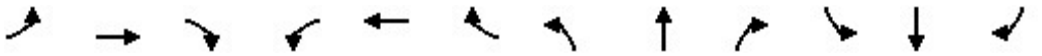
Notes

* 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)	130	2010	505	260	2915	145	155	265	270	130	210	110
Future Volume (veh/h)	130	2010	505	260	2915	145	155	265	270	130	210	110
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	130	2010	505	260	2915	145	155	265	270	130	210	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	132	1967	611	250	2855	141	244	225	229	125	281	147
Arrive On Green	0.10	0.52	0.52	0.10	0.31	0.31	0.08	0.27	0.27	0.05	0.25	0.25
Sat Flow, veh/h	1739	4985	1547	1739	6177	305	1739	829	845	1739	1128	591
Grp Volume(v), veh/h	130	2010	505	260	2218	842	155	0	535	130	0	320
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1570	1771	1739	0	1674	1739	0	1720
Q Serve(g_s), s	16.4	86.8	60.3	31.6	101.7	101.7	14.5	0.0	59.7	11.7	0.0	37.8
Cycle Q Clear(g_c), s	16.4	86.8	60.3	31.6	101.7	101.7	14.5	0.0	59.7	11.7	0.0	37.8
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.50	1.00		0.34
Lane Grp Cap(c), veh/h	132	1967	611	250	2178	819	244	0	454	125	0	429
V/C Ratio(X)	0.98	1.02	0.83	1.04	1.02	1.03	0.64	0.00	1.18	1.04	0.00	0.75
Avail Cap(c_a), veh/h	132	1967	611	250	2178	819	245	0	454	125	0	429
HCM Platoon Ratio	1.33	1.33	1.33	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	98.8	52.3	46.0	99.4	75.9	75.9	58.9	0.0	80.2	63.8	0.0	76.2
Incr Delay (d2), s/veh	73.3	26.1	12.2	68.0	24.1	39.0	4.1	0.0	100.9	91.0	0.0	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.9	38.3	24.6	19.3	46.7	56.0	6.8	0.0	38.7	8.3	0.0	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	172.1	78.3	58.2	167.4	100.0	114.9	63.0	0.0	181.0	154.8	0.0	83.2
LnGrp LOS	F	F	E	F	F	F	E	A	F	F	A	F
Approach Vol, veh/h		2645			3320			690			450	
Approach Delay, s/veh		79.1			109.1			154.5			103.9	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.5	108.5	20.0	68.0	38.4	93.6	24.8	63.2
Change Period (Y+Rc), s	6.8	6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	16.7	101.7	11.7	59.7	31.6	86.8	16.7	54.7
Max Q Clear Time (g_c+I1), s	18.4	103.7	13.7	61.7	33.6	88.8	16.5	39.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	102.0
HCM 6th LOS	F



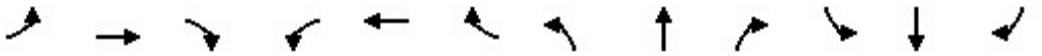
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1505	525	160	2775	35	120	155	645	95	195	45
Future Volume (veh/h)	60	1505	525	160	2775	35	120	155	645	95	195	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	60	1505	525	160	2775	35	120	155	645	95	195	45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	126	2449	760	235	2788	866	268	552	492	33	457	105
Arrive On Green	0.01	0.16	0.16	0.18	1.00	1.00	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	1113	1735	1547	664	1435	331
Grp Volume(v), veh/h	60	1505	525	160	2775	35	120	155	645	95	0	240
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	1113	1735	1547	664	0	1766
Q Serve(g_s), s	3.3	61.8	70.4	8.5	0.0	0.0	21.0	14.7	70.0	0.0	0.0	23.6
Cycle Q Clear(g_c), s	3.3	61.8	70.4	8.5	0.0	0.0	44.6	14.7	70.0	70.0	0.0	23.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	126	2449	760	235	2788	866	268	552	492	33	0	562
V/C Ratio(X)	0.48	0.61	0.69	0.68	1.00	0.04	0.45	0.28	1.31	2.90	0.00	0.43
Avail Cap(c_a), veh/h	149	2449	760	235	2788	866	268	552	492	33	0	562
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)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.1	72.8	76.4	76.9	0.0	0.0	76.8	56.2	75.0	110.0	0.0	59.2
Incr Delay (d2), s/veh	1.0	1.2	5.1	6.5	16.0	0.1	1.2	0.3	153.6	933.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	28.1	30.7	8.2	4.1	0.0	6.2	6.6	49.0	10.4	0.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	73.9	81.5	83.5	16.0	0.1	77.9	56.4	228.6	1043.2	0.0	59.7
LnGrp LOS	C	E	F	F	B	A	E	E	F	F	A	E
Approach Vol, veh/h		2090			2970			920			335	
Approach Delay, s/veh		74.3			19.4			179.9			338.6	
Approach LOS		E			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.0	130.0		78.0	27.0	115.0		78.0				
Change Period (Y+Rc), s	6.9	6.9		* 8	6.9	6.9		* 8				
Max Green Setting (Gmax), s	8.1	120.1		* 70	20.1	108.1		* 70				
Max Q Clear Time (g_c+I1), s	5.3	2.0		72.0	10.5	72.4		72.0				
Green Ext Time (p_c), s	0.0	46.1		0.0	0.1	13.2		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		77.9	
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)	95	2035	0	0	2940	240	0	0	0	310	0	60
Future Volume (veh/h)	95	2035	0	0	2940	240	0	0	0	310	0	60
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	95	2035	0	0	2940	240	0	0	0	366	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	121	5122	0	199	3798	1179	0	1	1	401	211	0
Arrive On Green	0.05	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1739	6537	0	1739	4985	1547	0	1826	1547	3478	1826	0
Grp Volume(v), veh/h	95	2035	0	0	2940	240	0	0	0	366	0	0
Grp Sat Flow(s),veh/h/ln	1739	1570	0	1739	1662	1547	0	1826	1547	1739	1826	0
Q Serve(g_s), s	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	0.0	0.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	121	5122	0	199	3798	1179	0	1	1	401	211	0
V/C Ratio(X)	0.78	0.40	0.00	0.00	0.77	0.20	0.00	0.00	0.00	0.91	0.00	0.00
Avail Cap(c_a), veh/h	147	5122	0	263	3798	1179	0	138	117	452	237	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)	1.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	96.2	0.0	0.0
Incr Delay (d2), s/veh	16.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	21.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	11.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	117.4	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	A	A	A	F	A	A
Approach Vol, veh/h		2130			3180			0			366	
Approach Delay, s/veh		2.0			0.1			0.0			117.4	
Approach LOS		A			A						F	

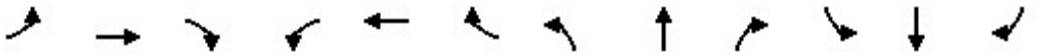
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	174.4		0.0	0.0	186.2		33.8				
Change Period (Y+Rc), s	6.8	6.8		* 8.4	6.8	6.8		8.4				
Max Green Setting (Gmax), s	8.2	136.2		* 17	8.2	136.2		28.6				
Max Q Clear Time (g_c+I1), s	4.8	2.0		0.0	0.0	2.0		24.9				
Green Ext Time (p_c), s	0.0	62.7		0.0	0.0	19.2		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	595	1470	280	210	1895	965	440	1060	310	1125	1090	840
Future Volume (veh/h)	595	1470	280	210	1895	965	440	1060	310	1125	1090	840
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	595	1470	0	210	1895	0	440	1060	0	1125	1090	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	423	1871		239	1600		313	938		773	1126	
Arrive On Green	0.25	0.75	0.00	0.07	0.32	0.00	0.09	0.19	0.00	0.23	0.32	0.00
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	4985	1547	3374	3469	1547
Grp Volume(v), veh/h	595	1470	0	210	1895	0	440	1060	0	1125	1090	0
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1662	1547	1687	1735	1547
Q Serve(g_s), s	27.6	39.4	0.0	13.6	70.6	0.0	20.4	41.4	0.0	50.4	68.1	0.0
Cycle Q Clear(g_c), s	27.6	39.4	0.0	13.6	70.6	0.0	20.4	41.4	0.0	50.4	68.1	0.0
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	423	1871		239	1600		313	938		773	1126	
V/C Ratio(X)	1.41	0.79		0.88	1.18		1.41	1.13		1.46	0.97	
Avail Cap(c_a), veh/h	423	1871		255	1600		313	938		773	1126	
HCM Platoon Ratio	2.00	2.00	2.00	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	0.09	0.09	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	82.4	22.0	0.0	101.2	74.7	0.0	99.8	89.3	0.0	84.8	73.2	0.0
Incr Delay (d2), s/veh	194.9	3.0	0.0	3.1	83.7	0.0	201.1	72.1	0.0	212.2	19.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.4	10.2	0.0	6.1	42.2	0.0	17.7	24.0	0.0	44.6	33.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	277.3	25.1	0.0	104.4	158.4	0.0	300.9	161.4	0.0	297.0	92.7	0.0
LnGrp LOS	F	C		F	F		F	F		F	F	
Approach Vol, veh/h		2065			2105			1500			2215	
Approach Delay, s/veh		97.8			153.0			202.3			196.5	
Approach LOS		F			F			F			F	

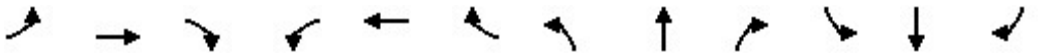
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	78.0	58.0	49.0	23.0	90.0	28.0	79.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	27.6	70.6	* 50	* 41	16.6	81.6	* 20	* 71
Max Q Clear Time (g_c+I1), s	29.6	72.6	52.4	43.4	15.6	41.4	22.4	70.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	160.1
HCM 6th LOS	F

Notes

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

Unsignalized Delay for [NBR, EBR, 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)	225	2085	595	220	2220	20	680	125	785	105	230	170
Future Volume (veh/h)	225	2085	595	220	2220	20	680	125	785	105	230	170
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	225	2085	0	220	2220	20	680	125	785	105	230	170
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	207	2225		356	2157	670	590	320	764	224	236	200
Arrive On Green	0.12	0.45	0.00	0.14	0.58	0.58	0.17	0.17	0.17	0.13	0.13	0.13
Sat Flow, veh/h	1739	4985	1547	3374	4985	1547	3374	1826	2723	1739	1826	1547
Grp Volume(v), veh/h	225	2085	0	220	2220	20	680	125	785	105	230	170
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1687	1662	1547	1687	1826	1362	1739	1826	1547
Q Serve(g_s), s	26.2	87.6	0.0	13.5	95.2	1.2	38.5	13.3	38.5	12.3	27.6	23.6
Cycle Q Clear(g_c), s	26.2	87.6	0.0	13.5	95.2	1.2	38.5	13.3	38.5	12.3	27.6	23.6
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	207	2225		356	2157	670	590	320	764	224	236	200
V/C Ratio(X)	1.09	0.94		0.62	1.03	0.03	1.15	0.39	1.03	0.47	0.98	0.85
Avail Cap(c_a), veh/h	207	2225		356	2157	670	590	320	764	224	236	200
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.40	0.40	0.40	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	96.9	58.0	0.0	90.4	46.7	26.7	90.8	80.4	79.2	88.8	95.5	93.7
Incr Delay (d2), s/veh	47.0	1.0	0.0	1.3	20.6	0.0	86.6	0.8	39.9	1.5	51.6	27.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	36.1	0.0	5.8	39.5	0.5	23.9	6.4	17.4	5.7	16.7	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.9	59.0	0.0	91.7	67.3	26.8	177.3	81.2	119.0	90.3	147.1	121.6
LnGrp LOS	F	E		F	F	C	F	F	F	F	F	F
Approach Vol, veh/h		2310			2460			1590			505	
Approach Delay, s/veh		67.3			69.2			141.0			126.7	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	103.0		46.0	31.0	106.0		37.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 26	* 95		* 39	* 23	* 98		28.4				
Max Q Clear Time (g_c+I1), s	28.2	97.2		40.5	15.5	89.6		29.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.4	6.3		0.0				

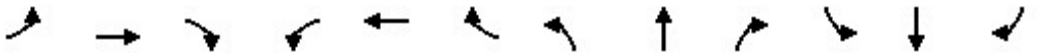
Intersection Summary		
HCM 6th Ctrl Delay		89.4
HCM 6th LOS		F

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.



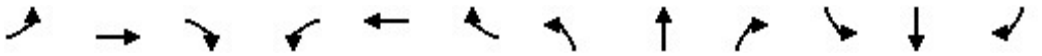
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	3215	15	10	2340	250	10	5	10	295	5	250
Future Volume (veh/h)	195	3215	15	10	2340	250	10	5	10	295	5	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	195	3215	15	10	2340	250	10	5	10	295	5	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	302	3311	1028	18	2916	905	23	14	9	189	3	334
Arrive On Green	0.18	1.00	1.00	0.02	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3374	4985	1547	1739	4985	1547	0	65	43	726	12	1547
Grp Volume(v), veh/h	195	3215	15	10	2340	250	25	0	0	300	0	250
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1739	1662	1547	108	0	0	739	0	1547
Q Serve(g_s), s	11.8	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.2
Cycle Q Clear(g_c), s	11.8	0.0	0.0	1.3	0.0	0.0	47.5	0.0	0.0	47.5	0.0	33.2
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.40	0.98		1.00
Lane Grp Cap(c), veh/h	302	3311	1028	18	2916	905	46	0	0	192	0	334
V/C Ratio(X)	0.65	0.97	0.01	0.55	0.80	0.28	0.54	0.00	0.00	1.56	0.00	0.75
Avail Cap(c_a), veh/h	302	3311	1028	69	2916	905	46	0	0	192	0	334
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)	1.00	1.00	1.00	0.61	0.61	0.61	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	87.1	0.0	0.0	107.2	0.0	0.0	73.1	0.0	0.0	90.3	0.0	80.7
Incr Delay (d2), s/veh	4.7	10.2	0.0	15.1	1.5	0.5	12.3	0.0	0.0	277.2	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.1	0.0	0.6	0.4	0.1	1.3	0.0	0.0	26.0	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	10.2	0.0	122.3	1.5	0.5	85.4	0.0	0.0	367.5	0.0	89.6
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		3425			2600			25			550	
Approach Delay, s/veh		14.8			1.9			85.4			241.2	
Approach LOS		B			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	136.0		57.0	9.6	153.4		57.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 20	* 1.3E2		47.5	* 8.7	* 1.4E2		47.5				
Max Q Clear Time (g_c+I1), s	13.8	2.0		49.5	3.3	2.0		49.5				
Green Ext Time (p_c), s	0.3	30.8		0.0	0.0	72.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		28.9	
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)	150	3270	100	85	2275	240	130	115	95	305	125	195
Future Volume (veh/h)	150	3270	100	85	2275	240	130	115	95	305	125	195
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	150	3270	100	85	2275	240	130	115	95	305	125	195
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	235	2986	927	70	2513	780	244	239	197	405	472	400
Arrive On Green	0.27	1.00	1.00	0.05	0.67	0.67	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	1034	925	764	2219	1826	1547
Grp Volume(v), veh/h	150	3270	100	85	2275	240	130	0	210	305	125	195
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	1034	0	1688	1110	1826	1547
Q Serve(g_s), s	16.7	131.8	0.0	8.9	84.2	14.2	25.2	0.0	23.2	29.7	12.0	23.5
Cycle Q Clear(g_c), s	16.7	131.8	0.0	8.9	84.2	14.2	37.2	0.0	23.2	52.9	12.0	23.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	235	2986	927	70	2513	780	244	0	436	405	472	400
V/C Ratio(X)	0.64	1.10	0.11	1.21	0.91	0.31	0.53	0.00	0.48	0.75	0.27	0.49
Avail Cap(c_a), veh/h	235	2986	927	70	2513	780	285	0	504	494	545	462
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.19	0.19	0.19	0.28	0.28	0.28	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.5	0.0	0.0	104.1	31.9	20.3	79.8	0.0	69.1	91.5	65.0	69.2
Incr Delay (d2), s/veh	1.1	44.1	0.0	124.9	1.8	0.3	1.8	0.0	0.8	5.2	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.2	0.0	6.4	29.6	4.8	6.9	0.0	10.3	8.9	5.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	44.1	0.0	229.0	33.7	20.6	81.6	0.0	69.9	96.7	65.3	70.2
LnGrp LOS	E	F	A	F	C	C	F	A	E	F	E	E
Approach Vol, veh/h		3520			2600			340			625	
Approach Delay, s/veh		44.2			38.9			74.4			82.1	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.9	118.0		65.1	16.0	138.9		65.1				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	20.9	110.9		65.7	8.9	122.9		65.7				
Max Q Clear Time (g_c+I1), s	18.7	86.2		39.2	10.9	133.8		54.9				
Green Ext Time (p_c), s	0.1	15.9		1.2	0.0	0.0		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			47.1									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	605	2605	455	325	1885	175	360	1095	325	410	620	355
Future Volume (veh/h)	605	2605	455	325	1885	175	360	1095	325	410	620	355
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	605	2605	455	325	1885	175	360	1095	325	410	620	355
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	580	2171	674	319	1785	554	858	787	497	320	732	493
Arrive On Green	0.34	0.87	0.87	0.09	0.36	0.36	0.17	0.23	0.23	0.09	0.15	0.15
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	4904	3469	1547	3374	4985	1547
Grp Volume(v), veh/h	605	2605	455	325	1885	175	360	1095	325	410	620	355
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1635	1735	1547	1687	1662	1547
Q Serve(g_s), s	37.8	95.8	20.3	20.8	78.8	18.0	14.4	49.9	14.6	20.9	26.7	25.9
Cycle Q Clear(g_c), s	37.8	95.8	20.3	20.8	78.8	18.0	14.4	49.9	14.6	20.9	26.7	25.9
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	580	2171	674	319	1785	554	858	787	497	320	732	493
V/C Ratio(X)	1.04	1.20	0.68	1.02	1.06	0.32	0.42	1.39	0.65	1.28	0.85	0.72
Avail Cap(c_a), veh/h	580	2171	674	319	1785	554	858	787	497	320	1221	645
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	14.2	9.3	99.6	70.6	51.1	80.8	85.1	37.8	99.5	91.4	28.7
Incr Delay (d2), s/veh	24.9	90.5	0.5	55.3	37.8	1.5	0.3	184.0	3.1	147.6	3.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	23.8	3.6	11.5	39.1	7.3	6.1	42.3	5.3	15.8	11.7	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.1	104.7	9.8	154.9	108.4	52.6	81.1	269.0	40.9	247.1	94.4	31.4
LnGrp LOS	F	F	A	F	F	D	F	F	D	F	F	C
Approach Vol, veh/h		3665			2385			1780			1385	
Approach Delay, s/veh		91.7			110.6			189.4			123.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.0	87.0	29.0	58.0	29.0	104.0	46.6	40.4
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	37.8	78.8	* 21	* 50	20.8	95.8	* 17	* 54
Max Q Clear Time (g_c+I1), s	39.8	80.8	22.9	51.9	22.8	97.8	16.4	28.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	120.2
HCM 6th LOS	F

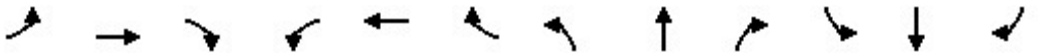
Notes

* 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 (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
Future Volume (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (prot)		3438	1538	1564	3234					1633	1664	1538
Flt Permitted		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (perm)		3438	1538	1564	3234					1633	1664	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	0	0	0	126
Lane Group Flow (vph)	0	960	379	906	1854	0	0	0	0	285	285	74
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		46.9	46.9	117.4	117.4					32.4	32.4	32.4
Effective Green, g (s)		46.9	46.9	117.4	117.4					32.4	32.4	32.4
Actuated g/C Ratio		0.21	0.21	0.53	0.53					0.15	0.15	0.15
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		732	327	834	1725					240	245	226
v/s Ratio Prot		c0.28		c0.58	0.57					c0.17	0.17	
v/s Ratio Perm			0.25									0.05
v/c Ratio		1.31	1.16	1.09	1.07					1.19	1.16	0.33
Uniform Delay, d1		86.5	86.5	51.3	51.3					93.8	93.8	84.0
Progression Factor		1.09	1.15	0.39	0.14					1.00	1.00	1.00
Incremental Delay, d2		145.4	88.5	41.2	35.0					118.3	108.8	0.8
Delay (s)		240.1	188.1	61.1	42.4					212.1	202.6	84.9
Level of Service		F	F	E	D					F	F	F
Approach Delay (s)		222.9			48.5			0.0			175.5	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	118.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	116.8%	ICU Level of Service	H
Analysis Period (min)	15		

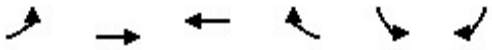
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
Future Volume (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3396			4940	1538	1633	1334	2799			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3396			4940	1538	1633	1334	2799			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	221	32	0	0	0
Lane Group Flow (vph)	0	1430	0	0	2470	498	265	215	832	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		87.4			82.5	82.5	28.4	28.4	117.4			
Effective Green, g (s)		87.4			82.5	82.5	28.4	28.4	117.4			
Actuated g/C Ratio		0.40			0.38	0.38	0.13	0.13	0.53			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1349			1852	576	210	172	1493			
v/s Ratio Prot		c0.42			c0.50		c0.16	0.16	0.30			
v/s Ratio Perm						0.32						
v/c Ratio		1.06			1.33	0.86	1.26	1.25	0.56			
Uniform Delay, d1		66.3			68.8	63.6	95.8	95.8	34.1			
Progression Factor		0.29			0.66	0.44	1.00	1.00	1.00			
Incremental Delay, d2		29.0			150.5	1.7	150.3	150.9	0.5			
Delay (s)		48.1			195.7	29.5	246.1	246.7	34.5			
Level of Service		D			F	C	F	F	C			
Approach Delay (s)		48.1			160.7			129.4			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	126.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	121.4%	ICU Level of Service	H
Analysis Period (min)	15		

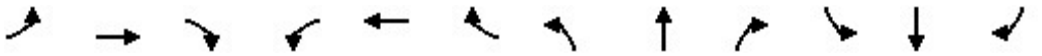
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	340	2635	2155	450	725	305
Future Volume (vph)	340	2635	2155	450	725	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	4940	4940	1538	3335	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	4940	4940	1538	3335	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	2635	2155	450	725	305
RTOR Reduction (vph)	0	0	0	76	0	1
Lane Group Flow (vph)	340	2635	2155	374	725	304
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	38.1	151.9	105.9	105.9	50.2	98.3
Effective Green, g (s)	38.1	151.9	105.9	105.9	50.2	98.3
Actuated g/C Ratio	0.17	0.69	0.48	0.48	0.23	0.45
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	577	3410	2377	740	760	687
v/s Ratio Prot	0.10	c0.53	c0.44		c0.22	0.20
v/s Ratio Perm				0.24		
v/c Ratio	0.59	0.77	0.91	0.51	0.95	0.44
Uniform Delay, d1	83.7	22.6	52.5	39.1	83.8	42.0
Progression Factor	1.35	0.54	0.46	0.44	1.00	1.00
Incremental Delay, d2	0.4	0.5	4.1	1.5	21.9	0.5
Delay (s)	113.1	12.7	28.5	18.7	105.7	42.4
Level of Service	F	B	C	B	F	D
Approach Delay (s)		24.2	26.8		87.0	
Approach LOS		C	C		F	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	305	30	690	250	565	15	725	595	490	1115	45
Future Volume (veh/h)	30	305	30	690	250	565	15	725	595	490	1115	45
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	305	30	690	250	565	15	725	595	490	1115	45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	272	336	33	746	311	264	24	1331	594	526	1788	72
Arrive On Green	0.16	0.11	0.11	0.07	0.06	0.06	0.01	0.38	0.38	0.16	0.53	0.53
Sat Flow, veh/h	1739	3193	312	3374	1826	1547	1739	3469	1547	3374	3399	137
Grp Volume(v), veh/h	30	165	170	690	250	565	15	725	595	490	569	591
Grp Sat Flow(s),veh/h/ln	1739	1735	1770	1687	1826	1547	1739	1735	1547	1687	1735	1801
Q Serve(g_s), s	3.3	20.7	21.0	44.7	29.8	27.4	1.9	35.8	84.4	31.6	50.9	50.9
Cycle Q Clear(g_c), s	3.3	20.7	21.0	44.7	29.8	27.4	1.9	35.8	84.4	31.6	50.9	50.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	272	183	186	746	311	264	24	1331	594	526	913	948
V/C Ratio(X)	0.11	0.90	0.91	0.92	0.80	2.14	0.63	0.54	1.00	0.93	0.62	0.62
Avail Cap(c_a), veh/h	272	192	196	802	568	481	70	1331	594	581	913	948
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	0.32	0.32	0.32	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.6	97.3	97.4	100.1	100.2	55.5	108.0	52.8	67.8	91.7	36.8	36.8
Incr Delay (d2), s/veh	0.1	37.7	39.9	6.4	2.3	518.8	9.9	1.6	37.4	20.8	3.2	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.3	11.8	21.2	15.0	49.5	0.9	15.9	39.7	15.3	22.3	23.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	135.0	137.4	106.5	102.5	574.3	117.8	54.4	105.2	112.5	40.0	39.9
LnGrp LOS	E	F	F	F	F	F	F	D	F	F	D	D
Approach Vol, veh/h		365			1505			1335			1650	
Approach Delay, s/veh		131.6			281.5			77.7			61.5	
Approach LOS		F			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	122.7	42.2	45.1	41.4	91.3	56.4	30.9
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 8.9	105.1	* 8.3	* 68	* 38	76.1	* 52	* 24
Max Q Clear Time (g_c+I1), s	3.9	52.9	5.3	31.8	33.6	86.4	46.7	23.0
Green Ext Time (p_c), s	0.0	3.9	0.0	5.7	0.8	0.0	1.9	0.2

Intersection Summary	
HCM 6th Ctrl Delay	139.4
HCM 6th LOS	F

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)	370	2560	130	350	1755	440	235	720	250	510	1110	390
Future Volume (veh/h)	370	2560	130	350	1755	440	235	720	250	510	1110	390
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	370	2560	130	350	1755	440	235	720	250	510	1110	390
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	402	2218	689	274	2030	819	198	740	456	412	960	613
Arrive On Green	0.04	0.15	0.15	0.16	0.81	0.81	0.06	0.21	0.21	0.12	0.28	0.28
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	3469	1547	3374	3469	1547
Grp Volume(v), veh/h	370	2560	130	350	1755	440	235	720	250	510	1110	390
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1735	1547	1687	1735	1547
Q Serve(g_s), s	24.1	97.9	12.5	17.9	48.6	21.4	12.9	45.3	9.1	26.9	60.9	44.8
Cycle Q Clear(g_c), s	24.1	97.9	12.5	17.9	48.6	21.4	12.9	45.3	9.1	26.9	60.9	44.8
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	402	2218	689	274	2030	819	198	740	456	412	960	613
V/C Ratio(X)	0.92	1.15	0.19	1.28	0.86	0.54	1.19	0.97	0.55	1.24	1.16	0.64
Avail Cap(c_a), veh/h	428	2218	689	274	2030	819	198	740	456	412	960	613
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)	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	104.6	93.8	35.0	92.1	16.6	9.2	103.6	85.9	35.5	96.6	79.6	53.7
Incr Delay (d2), s/veh	8.0	70.8	0.2	149.0	5.2	2.5	123.9	26.4	0.8	125.7	82.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	58.8	5.2	12.9	9.3	4.4	9.1	22.9	7.7	19.0	37.9	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	112.6	164.7	35.1	241.1	21.8	11.7	227.4	112.4	36.3	222.2	161.6	55.3
LnGrp LOS	F	F	D	F	C	B	F	F	D	F	F	E
Approach Vol, veh/h		3060			2545			1205			2010	
Approach Delay, s/veh		152.9			50.2			119.0			156.3	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.3	96.7	35.0	55.0	25.0	105.0	21.0	69.0
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 28	* 88	* 27	* 47	* 18	* 98	* 13	* 61
Max Q Clear Time (g_c+I1), s	26.1	50.6	28.9	47.3	19.9	99.9	14.9	62.9
Green Ext Time (p_c), s	0.2	15.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	119.4
HCM 6th LOS	F

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)	0	2780	875	0	2625	225	225	205	415	175	315	100
Future Volume (veh/h)	0	2780	875	0	2625	225	225	205	415	175	315	100
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	0	1826	1826	0	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	0	2780	875	0	2625	225	225	205	415	175	315	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	5	5	0	5	5	5	5	5	5	5	5
Cap, veh/h	0	2192	625	0	2667	223	212	136	276	157	294	93
Arrive On Green	0.00	0.76	0.76	0.00	1.00	1.00	0.10	0.25	0.25	0.07	0.22	0.22
Sat Flow, veh/h	0	4016	1099	0	4851	392	1739	539	1091	1739	1328	422
Grp Volume(v), veh/h	0	2359	1296	0	1842	1008	225	0	620	175	0	415
Grp Sat Flow(s),veh/h/ln	0	1662	1628	0	1662	1755	1739	0	1630	1739	0	1750
Q Serve(g_s), s	0.0	125.2	125.2	0.0	0.0	125.2	22.7	0.0	55.7	15.7	0.0	48.7
Cycle Q Clear(g_c), s	0.0	125.2	125.2	0.0	0.0	125.2	22.7	0.0	55.7	15.7	0.0	48.7
Prop In Lane	0.00		0.68	0.00		0.22	1.00		0.67	1.00		0.24
Lane Grp Cap(c), veh/h	0	1891	927	0	1891	999	212	0	413	157	0	387
V/C Ratio(X)	0.00	1.25	1.40	0.00	0.97	1.01	1.06	0.00	1.50	1.12	0.00	1.07
Avail Cap(c_a), veh/h	0	1891	927	0	1891	999	212	0	413	157	0	387
HCM Platoon Ratio	1.00	1.33	1.33	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.00	0.48	0.48	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	26.7	26.7	0.0	0.0	0.0	74.0	0.0	82.2	69.5	0.0	85.7
Incr Delay (d2), s/veh	0.0	111.7	180.1	0.0	9.4	22.0	78.7	0.0	238.6	106.3	0.0	66.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	68.7	84.9	0.0	2.5	6.1	13.9	0.0	51.0	11.2	0.0	29.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	138.5	206.9	0.0	9.4	22.0	152.7	0.0	320.8	175.8	0.0	151.7
LnGrp LOS	A	F	F	A	A	F	F	A	F	F	A	F
Approach Vol, veh/h		3655			2850			845			590	
Approach Delay, s/veh		162.7			13.9			276.0			158.8	
Approach LOS		F			B			F			F	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	132.0	24.0	64.0	132.0	31.0	57.0
Change Period (Y+Rc), s	6.8	8.3	8.3	6.8	8.3	8.3
Max Green Setting (Gmax), s	125.2	15.7	55.7	125.2	22.7	48.7
Max Q Clear Time (g_c+I1), s	127.2	17.7	57.7	127.2	24.7	50.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	121.1
HCM 6th LOS	F

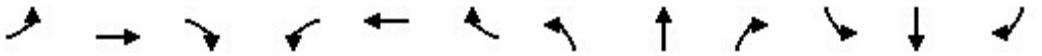
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2270	730	0	2345	100	365	295	840	80	175	10
Future Volume (veh/h)	0	2270	730	0	2345	100	365	295	840	80	175	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	0	1826	1826	0	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	0	2270	730	0	2345	100	365	295	840	80	175	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	5	5	0	5	5	5	5	5	5	5	5
Cap, veh/h	0	2093	609	0	2677	113	446	568	506	88	306	17
Arrive On Green	0.00	0.37	0.37	0.00	0.18	0.18	0.18	0.33	0.33	0.03	0.18	0.18
Sat Flow, veh/h	0	3997	1115	0	5068	208	1739	1735	1547	1739	1711	98
Grp Volume(v), veh/h	0	1936	1064	0	1584	861	365	295	840	80	0	185
Grp Sat Flow(s),veh/h/ln	0	1662	1625	0	1662	1788	1739	1735	1547	1739	0	1808
Q Serve(g_s), s	0.0	120.1	120.1	0.0	102.0	103.2	37.5	30.3	72.0	6.8	0.0	20.6
Cycle Q Clear(g_c), s	0.0	120.1	120.1	0.0	102.0	103.2	37.5	30.3	72.0	6.8	0.0	20.6
Prop In Lane	0.00		0.69	0.00		0.12	1.00		1.00	1.00		0.05
Lane Grp Cap(c), veh/h	0	1814	887	0	1814	976	446	568	506	88	0	323
V/C Ratio(X)	0.00	1.07	1.20	0.00	0.87	0.88	0.82	0.52	1.66	0.91	0.00	0.57
Avail Cap(c_a), veh/h	0	1814	887	0	1814	976	457	568	506	88	0	323
HCM Platoon Ratio	1.00	0.67	0.67	1.00	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.56	0.56	0.00	0.82	0.82	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	69.8	69.8	0.0	82.8	83.3	58.6	60.0	74.0	59.1	0.0	82.6
Incr Delay (d2), s/veh	0.0	37.4	96.0	0.0	5.1	9.5	11.0	0.8	305.1	66.5	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	61.4	74.5	0.0	47.3	52.6	18.1	13.7	71.7	4.7	0.0	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	107.2	165.7	0.0	87.9	92.8	69.6	60.8	379.1	125.6	0.0	85.1
LnGrp LOS	A	F	F	A	F	F	E	E	F	F	A	F
Approach Vol, veh/h		3000			2445			1500			265	
Approach Delay, s/veh		127.9			89.6			241.2			97.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		127.0	13.0	80.0		127.0	45.7	47.3				
Change Period (Y+Rc), s		6.9	6.0	* 8		6.9	6.0	* 8				
Max Green Setting (Gmax), s		120.1	7.0	* 72		120.1	41.0	* 38				
Max Q Clear Time (g_c+I1), s		105.2	8.8	74.0		122.1	39.5	22.6				
Green Ext Time (p_c), s		10.8	0.0	0.0		0.0	0.2	0.4				

Intersection Summary		
HCM 6th Ctrl Delay		137.4
HCM 6th LOS		F

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)	0	3405	0	0	2390	450	0	0	0	285	0	75
Future Volume (veh/h)	0	3405	0	0	2390	450	0	0	0	285	0	75
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	0	1826	1826	0	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	0	3405	0	0	2390	450	0	0	0	180	147	75
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	5	5	0	5	5	5	5	5	5	5	5
Cap, veh/h	0	4015	0	0	4015	1246	0	1	1	218	143	73
Arrive On Green	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.13	0.13	0.13
Sat Flow, veh/h	0	5313	0	0	5149	1547	0	1826	1547	1739	1140	581
Grp Volume(v), veh/h	0	3405	0	0	2390	450	0	0	0	180	0	222
Grp Sat Flow(s),veh/h/ln	0	1662	0	0	1662	1547	0	1826	1547	1739	0	1721
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	27.6
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	27.6
Prop In Lane	0.00		0.00	0.00		1.00	0.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	0	4015	0	0	4015	1246	0	1	1	218	0	216
V/C Ratio(X)	0.00	0.85	0.00	0.00	0.60	0.36	0.00	0.00	0.00	0.83	0.00	1.03
Avail Cap(c_a), veh/h	0	4015	0	0	4015	1246	0	138	117	218	0	216
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.8	0.0	96.2
Incr Delay (d2), s/veh	0.0	2.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	22.1	0.0	68.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	16.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	115.9	0.0	164.9
LnGrp LOS	A	A	A	A	A	A	A	A	A	F	A	F
Approach Vol, veh/h		3405			2840			0			402	
Approach Delay, s/veh		2.4			0.1			0.0			143.0	
Approach LOS		A			A						F	

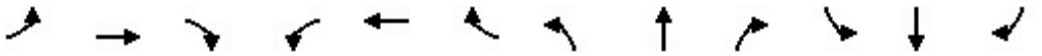
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		184.0		0.0		184.0		36.0				
Change Period (Y+Rc), s		6.8		* 8.4		6.8		8.4				
Max Green Setting (Gmax), s		152.2		* 17		152.2		27.6				
Max Q Clear Time (g_c+I1), s		2.0		0.0		2.0		29.6				
Green Ext Time (p_c), s		39.7		0.0		92.5		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	9.9
HCM 6th LOS	A

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	2175	760	665	2220	130	510	235	290	50	140	140
Future Volume (veh/h)	140	2175	760	665	2220	130	510	235	290	50	140	140
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	140	2175	0	665	2220	130	510	235	290	50	140	140
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	152	2066		680	2636	818	573	310	1011	122	128	108
Arrive On Green	0.09	0.41	0.00	0.27	0.70	0.70	0.17	0.17	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1739	4985	1547	3374	4985	1547	3374	1826	2723	1739	1826	1547
Grp Volume(v), veh/h	140	2175	0	665	2220	130	510	235	290	50	140	140
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1687	1662	1547	1687	1826	1362	1739	1826	1547
Q Serve(g_s), s	17.6	91.2	0.0	43.0	71.3	6.2	32.5	27.0	0.0	6.1	15.4	15.4
Cycle Q Clear(g_c), s	17.6	91.2	0.0	43.0	71.3	6.2	32.5	27.0	0.0	6.1	15.4	15.4
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	152	2066		680	2636	818	573	310	1011	122	128	108
V/C Ratio(X)	0.92	1.05		0.98	0.84	0.16	0.89	0.76	0.29	0.41	1.10	1.29
Avail Cap(c_a), veh/h	152	2066		680	2636	818	682	369	1100	122	128	108
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.36	0.36	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	99.7	64.4	0.0	80.0	26.0	16.3	89.3	87.0	48.7	98.0	102.3	102.3
Incr Delay (d2), s/veh	8.7	25.1	0.0	15.8	1.3	0.1	12.3	7.3	0.2	2.2	107.5	184.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	42.4	0.0	19.4	24.1	2.2	15.1	13.4	5.8	2.9	11.3	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.4	89.5	0.0	95.8	27.2	16.4	101.6	94.3	48.8	100.2	209.8	286.4
LnGrp LOS	F	F		F	C	B	F	F	D	F	F	F
Approach Vol, veh/h		2315			3015			1035			330	
Approach Delay, s/veh		90.7			41.9			85.2			225.7	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	124.1		44.9	52.1	99.0		24.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 19	* 1.1E2		* 45	* 37	* 91		15.4				
Max Q Clear Time (g_c+I1), s	19.6	73.3		34.5	45.0	93.2		17.4				
Green Ext Time (p_c), s	0.0	18.3		2.8	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		74.5
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 [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)	190	2380	25	15	3210	375	5	5	5	180	5	250
Future Volume (veh/h)	190	2380	25	15	3210	375	5	5	5	180	5	250
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	190	2380	25	15	3210	375	5	5	5	180	5	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	210	3528	1095	69	3415	1060	22	21	10	121	2	222
Arrive On Green	0.06	0.71	0.71	0.08	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	3374	4985	1547	1739	4985	1547	0	146	73	621	17	1547
Grp Volume(v), veh/h	190	2380	25	15	3210	375	15	0	0	185	0	250
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1739	1662	1547	218	0	0	638	0	1547
Q Serve(g_s), s	12.3	58.8	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Cycle Q Clear(g_c), s	12.3	58.8	1.1	1.8	0.0	0.0	31.5	0.0	0.0	31.5	0.0	31.5
Prop In Lane	1.00		1.00	1.00		1.00	0.33		0.33	0.97		1.00
Lane Grp Cap(c), veh/h	210	3528	1095	69	3415	1060	53	0	0	124	0	222
V/C Ratio(X)	0.90	0.67	0.02	0.22	0.94	0.35	0.28	0.00	0.00	1.50	0.00	1.13
Avail Cap(c_a), veh/h	210	3528	1095	69	3415	1060	53	0	0	124	0	222
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.17	0.17	0.17	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	102.5	18.0	9.6	98.1	0.0	0.0	83.2	0.0	0.0	98.4	0.0	94.3
Incr Delay (d2), s/veh	37.0	1.1	0.0	0.3	1.3	0.2	2.9	0.0	0.0	260.9	0.0	99.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	21.7	0.4	0.8	0.4	0.0	0.8	0.0	0.0	16.2	0.0	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.5	19.0	9.6	98.4	1.3	0.2	86.0	0.0	0.0	359.3	0.0	193.6
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		2595			3600			15			435	
Approach Delay, s/veh		27.8			1.6			86.0			264.0	
Approach LOS		C			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.0	158.0		41.0	16.0	163.0		41.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 14	* 1.5E2		31.5	* 8.7	* 1.6E2		31.5				
Max Q Clear Time (g_c+I1), s	14.3	2.0		33.5	3.8	60.8		33.5				
Green Ext Time (p_c), s	0.0	85.8		0.0	0.0	27.3		0.0				

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)	85	2400	80	85	3230	210	130	185	50	270	130	235
Future Volume (veh/h)	85	2400	80	85	3230	210	130	185	50	270	130	235
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	85	2400	80	85	3230	210	130	185	50	270	130	235
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	70	2671	829	252	3192	991	188	300	81	274	396	335
Arrive On Green	0.08	1.00	1.00	0.29	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	993	1384	374	2169	1826	1547
Grp Volume(v), veh/h	85	2400	80	85	3230	210	130	0	235	270	130	235
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	993	0	1759	1085	1826	1547
Q Serve(g_s), s	8.9	0.0	0.0	8.5	140.9	0.0	28.0	0.0	26.6	21.1	13.2	30.9
Cycle Q Clear(g_c), s	8.9	0.0	0.0	8.5	140.9	0.0	41.2	0.0	26.6	47.7	13.2	30.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	70	2671	829	252	3192	991	188	0	381	274	396	335
V/C Ratio(X)	1.21	0.90	0.10	0.34	1.01	0.21	0.69	0.00	0.62	0.99	0.33	0.70
Avail Cap(c_a), veh/h	70	2671	829	252	3192	991	188	0	381	274	396	335
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)	0.71	0.71	0.71	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	101.1	0.0	0.0	69.8	0.0	0.0	90.0	0.0	77.9	101.9	72.6	79.6
Incr Delay (d2), s/veh	156.7	3.9	0.2	0.1	8.1	0.0	10.2	0.0	3.0	50.5	0.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	1.0	0.0	3.6	2.4	0.0	7.8	0.0	12.5	9.7	6.3	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	257.8	3.9	0.2	69.9	8.1	0.0	100.2	0.0	80.8	152.3	73.1	85.9
LnGrp LOS	F	A	A	E	F	A	F	A	F	F	E	F
Approach Vol, veh/h		2565			3525			365			635	
Approach Delay, s/veh		12.2			9.1			87.7			111.5	
Approach LOS		B			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	148.0		56.0	39.0	125.0		56.0				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	8.9	140.9		47.7	31.9	117.9		47.7				
Max Q Clear Time (g_c+I1), s	10.9	142.9		43.2	10.5	2.0		49.7				
Green Ext Time (p_c), s	0.0	0.0		0.6	0.2	29.5		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	1865	310	355	2700	240	475	1055	305	320	765	350
Future Volume (veh/h)	550	1865	310	355	2700	240	475	1055	305	320	765	350
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	550	1865	310	355	2700	240	475	1055	305	320	765	350
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	426	2185	678	386	2125	660	523	787	528	244	960	493
Arrive On Green	0.25	0.88	0.88	0.11	0.43	0.43	0.11	0.23	0.23	0.07	0.19	0.19
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	4904	3469	1547	3374	4985	1547
Grp Volume(v), veh/h	550	1865	310	355	2700	240	475	1055	305	320	765	350
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1635	1735	1547	1687	1662	1547
Q Serve(g_s), s	27.8	40.3	9.1	22.9	93.8	23.2	21.1	49.9	35.6	15.9	32.2	42.3
Cycle Q Clear(g_c), s	27.8	40.3	9.1	22.9	93.8	23.2	21.1	49.9	35.6	15.9	32.2	42.3
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	426	2185	678	386	2125	660	523	787	528	244	960	493
V/C Ratio(X)	1.29	0.85	0.46	0.92	1.27	0.36	0.91	1.34	0.58	1.31	0.80	0.71
Avail Cap(c_a), veh/h	426	2185	678	411	2125	660	555	787	528	244	960	493
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.2	10.1	8.2	96.4	63.1	42.8	97.2	85.1	59.5	102.0	84.7	66.0
Incr Delay (d2), s/veh	136.2	1.5	0.7	24.9	125.5	1.6	18.3	161.9	1.6	166.8	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	4.8	2.3	11.3	63.3	9.3	9.8	39.9	14.3	12.7	14.3	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	218.4	11.6	8.9	121.3	188.6	44.4	115.6	246.9	61.0	268.8	89.5	70.6
LnGrp LOS	F	B	A	F	F	D	F	F	E	F	F	E
Approach Vol, veh/h		2725			3295			1835			1435	
Approach Delay, s/veh		53.0			170.9			182.0			124.9	
Approach LOS		D			F			F			F	

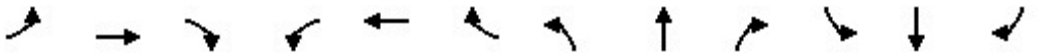
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.0	102.0	24.0	58.0	33.4	104.6	31.6	50.4
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	27.8	93.8	* 16	* 50	26.8	94.8	* 25	* 41
Max Q Clear Time (g_c+I1), s	29.8	95.8	17.9	51.9	24.9	42.3	23.1	44.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.3	28.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	131.4
HCM 6th LOS	F

Notes

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

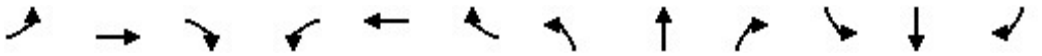
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
Future Volume (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (prot)		3438	1538	1564	3251					1633	1673	1538
Flt Permitted		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (perm)		3438	1538	1564	3251					1633	1673	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
RTOR Reduction (vph)	0	0	95	0	0	0	0	0	0	0	0	267
Lane Group Flow (vph)	0	1060	235	715	1465	0	0	0	0	278	287	158
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		54.9	54.9	109.4	109.4					32.4	32.4	32.4
Effective Green, g (s)		54.9	54.9	109.4	109.4					32.4	32.4	32.4
Actuated g/C Ratio		0.25	0.25	0.50	0.50					0.15	0.15	0.15
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		857	383	777	1616					240	246	226
v/s Ratio Prot		c0.31		c0.46	0.45					0.17	c0.17	
v/s Ratio Perm			0.15									0.10
v/c Ratio		1.24	0.61	0.92	0.91					1.16	1.17	0.70
Uniform Delay, d1		82.5	73.2	51.3	50.6					93.8	93.8	89.2
Progression Factor		1.18	1.38	0.34	0.13					1.00	1.00	1.00
Incremental Delay, d2		112.2	1.6	2.0	0.8					107.6	109.9	9.1
Delay (s)		209.5	102.5	19.3	7.2					201.4	203.7	98.3
Level of Service		F	F	B	A					F	F	F
Approach Delay (s)		184.1			11.1			0.0			157.8	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	95.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
Future Volume (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3415			4940	1538	1633	1332	2799			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3415			4940	1538	1633	1332	2799			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	271	34	0	0	0
Lane Group Flow (vph)	0	1495	0	0	1840	358	306	326	1163	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		95.4			67.5	67.5	35.4	35.4	109.4			
Effective Green, g (s)		95.4			67.5	67.5	35.4	35.4	109.4			
Actuated g/C Ratio		0.43			0.31	0.31	0.16	0.16	0.50			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1480			1515	471	262	214	1391			
v/s Ratio Prot		c0.44			c0.37		0.19	c0.24	0.42			
v/s Ratio Perm						0.23						
v/c Ratio		1.01			1.21	0.76	1.17	1.52	0.84			
Uniform Delay, d1		62.3			76.2	68.9	92.3	92.3	47.6			
Progression Factor		0.14			0.70	0.65	1.00	1.00	1.00			
Incremental Delay, d2		9.7			99.7	5.7	108.8	257.8	4.5			
Delay (s)		18.5			152.7	50.7	201.1	350.1	52.1			
Level of Service		B			F	D	F	F	D			
Approach Delay (s)		18.5			129.8			158.5			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	112.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	290	75	2800	200	2495	25	0	115
Future Volume (vph)	290	75	2800	200	2495	25	0	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0			6.0
Lane Util. Factor		1.00	0.91	1.00	0.91			1.00
Frt		1.00	1.00	1.00	1.00			0.85
Flt Protected		0.95	1.00	0.95	1.00			1.00
Satd. Flow (prot)		1719	4940	1719	4933			1538
Flt Permitted		0.95	1.00	0.95	1.00			1.00
Satd. Flow (perm)		1719	4940	1719	4933			1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	290	75	2800	200	2495	25	0	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	86
Lane Group Flow (vph)	0	365	2800	200	2520	0	0	29
Turn Type	Prot	Prot	NA	Prot	NA		Prot	Perm
Protected Phases	1	1	6	5	2		8	
Permitted Phases								8
Actuated Green, G (s)		66.6	174.6	18.0	126.0			9.4
Effective Green, g (s)		66.6	174.6	18.0	126.0			9.4
Actuated g/C Ratio		0.30	0.79	0.08	0.57			0.04
Clearance Time (s)		6.0	6.0	6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)		520	3920	140	2825			65
v/s Ratio Prot		c0.21	0.57	c0.12	c0.51			
v/s Ratio Perm								c0.02
v/c Ratio		0.70	0.71	1.43	0.89			0.44
Uniform Delay, d1		67.9	10.8	101.0	41.1			102.7
Progression Factor		1.16	0.90	0.84	1.65			1.00
Incremental Delay, d2		2.6	0.7	209.9	2.2			4.8
Delay (s)		81.6	10.5	294.7	70.1			107.5
Level of Service		F	B	F	E			F
Approach Delay (s)			18.7		86.6		107.5	
Approach LOS			B		F		F	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	50	35	3040	60	15	2260	130	0	0	360	0	0
Future Volume (vph)	50	35	3040	60	15	2260	130	0	0	360	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0				4.0		
Lane Util. Factor		1.00	0.91		1.00	0.91				1.00		
Frt		1.00	1.00		1.00	0.99				0.86		
Flt Protected		0.95	1.00		0.95	1.00				1.00		
Satd. Flow (prot)		1719	4926		1719	4900				1565		
Flt Permitted		0.95	1.00		0.95	1.00				1.00		
Satd. Flow (perm)		1719	4926		1719	4900				1565		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	35	3040	60	15	2260	130	0	0	360	0	0
RTOR Reduction (vph)	0	0	0	0	0	1	0	0	0	360	0	0
Lane Group Flow (vph)	0	85	3100	0	15	2389	0	0	0	0	0	0
Turn Type	Prot	Prot	NA		Prot	NA				custom		
Protected Phases	1	1	6		5	2						
Permitted Phases												
Actuated Green, G (s)		18.0	205.0		3.0	190.0				0.0		
Effective Green, g (s)		18.0	205.0		3.0	190.0				0.0		
Actuated g/C Ratio		0.08	0.93		0.01	0.86				0.00		
Clearance Time (s)		6.0	6.0		6.0	6.0						
Vehicle Extension (s)		3.0	3.0		3.0	3.0						
Lane Grp Cap (vph)		140	4590		23	4231				0		
v/s Ratio Prot		c0.05	c0.63		0.01	0.49						
v/s Ratio Perm												
v/c Ratio		0.61	0.68		0.65	0.56				0.00		
Uniform Delay, d1		97.6	1.4		108.0	4.0				110.0		
Progression Factor		1.10	2.95		1.20	0.73				1.00		
Incremental Delay, d2		0.7	0.1		44.1	0.5				0.0		
Delay (s)		107.9	4.1		173.6	3.4				110.0		
Level of Service		F	A		F	A				F		
Approach Delay (s)			6.9			4.4			110.0			110.0
Approach LOS			A			A			F			F

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	135
Future Volume (vph)	135
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.0
Lane Util. Factor	1.00
Frt	0.86
Flt Protected	1.00
Satd. Flow (prot)	1565
Flt Permitted	1.00
Satd. Flow (perm)	1565
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	135
RTOR Reduction (vph)	135
Lane Group Flow (vph)	0
Turn Type	custom
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	0.0
Effective Green, g (s)	0.0
Actuated g/C Ratio	0.00
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	0
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	0.00
Uniform Delay, d1	110.0
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	110.0
Level of Service	F
Approach Delay (s)	
Approach LOS	
Intersection Summary	

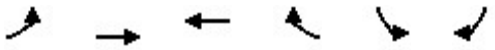
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	540	920	1905	325	225	1530	1120	290	1020	265	900	1290
Future Volume (vph)	540	920	1905	325	225	1530	1120	290	1020	265	900	1290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.4	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.6	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	3438
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	3438
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	540	920	1905	325	225	1530	1120	290	1020	265	900	1290
RTOR Reduction (vph)	0	0	0	83	0	0	204	0	0	109	0	0
Lane Group Flow (vph)	0	1460	1905	242	225	1530	916	290	1020	156	900	1290
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		7	4		3	8
Permitted Phases				6			2			4		
Actuated Green, G (s)		43.6	101.7	101.7	17.5	75.6	75.6	11.4	40.4	40.4	30.4	59.4
Effective Green, g (s)		43.6	101.7	101.7	17.5	75.6	75.6	11.4	40.4	40.4	30.4	59.4
Actuated g/C Ratio		0.20	0.46	0.46	0.08	0.34	0.34	0.05	0.18	0.18	0.14	0.27
Clearance Time (s)		7.4	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		660	2283	710	265	1697	528	172	907	282	460	928
v/s Ratio Prot		c0.44	0.39		0.07	0.31		c0.09	0.21		c0.27	c0.38
v/s Ratio Perm				0.16			c0.60			0.10		
v/c Ratio		2.21	0.83	0.34	0.85	0.90	1.73	1.69	1.12	0.55	1.96	1.39
Uniform Delay, d1		88.2	51.8	37.8	99.9	68.7	72.2	104.3	89.8	81.6	94.8	80.3
Progression Factor		0.81	0.68	0.39	0.84	0.99	1.38	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		547.9	1.9	0.7	12.3	4.7	334.8	332.6	70.3	2.4	438.3	182.2
Delay (s)		619.5	37.2	15.5	95.9	73.0	434.7	436.9	160.1	84.0	533.1	262.5
Level of Service		F	D	B	F	E	F	F	F	F	F	F
Approach Delay (s)			265.7			215.7			198.3			325.2
Approach LOS			F			F			F			F

Intersection Summary			
HCM 2000 Control Delay	257.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	149.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	480
Future Volume (vph)	480
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1538
Flt Permitted	1.00
Satd. Flow (perm)	1538
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	480
RTOR Reduction (vph)	97
Lane Group Flow (vph)	383
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	59.4
Effective Green, g (s)	59.4
Actuated g/C Ratio	0.27
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	415
v/s Ratio Prot	
v/s Ratio Perm	0.25
v/c Ratio	0.92
Uniform Delay, d1	78.1
Progression Factor	1.00
Incremental Delay, d2	25.9
Delay (s)	103.9
Level of Service	F
Approach Delay (s)	
Approach LOS	

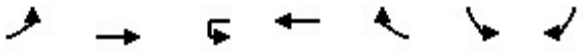
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	280	2235	2660	770	410	355
Future Volume (vph)	280	2235	2660	770	410	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	4940	4940	1538	3335	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	4940	4940	1538	3335	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	280	2235	2660	770	410	355
RTOR Reduction (vph)	0	0	0	106	0	1
Lane Group Flow (vph)	280	2235	2660	664	410	354
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	28.1	168.1	132.1	132.1	34.0	72.1
Effective Green, g (s)	28.1	168.1	132.1	132.1	34.0	72.1
Actuated g/C Ratio	0.13	0.76	0.60	0.60	0.15	0.33
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	425	3774	2966	923	515	504
v/s Ratio Prot	0.08	0.45	c0.54		0.12	c0.23
v/s Ratio Perm				0.43		
v/c Ratio	0.66	0.59	0.90	0.72	0.80	0.70
Uniform Delay, d1	91.4	11.2	38.1	30.9	89.7	64.6
Progression Factor	1.42	0.12	0.65	0.56	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.9	1.9	8.3	4.4
Delay (s)	130.9	1.4	26.8	19.3	98.0	69.0
Level of Service	F	A	C	B	F	E
Approach Delay (s)		15.8	25.1		84.5	
Approach LOS		B	C		F	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	195	3120	530	2245	175	0	275
Future Volume (vph)	195	3120	530	2245	175	0	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0			4.0
Lane Util. Factor	1.00	0.91	1.00	0.91			1.00
Frt	1.00	1.00	1.00	0.99			0.86
Flt Protected	0.95	1.00	0.95	1.00			1.00
Satd. Flow (prot)	1719	4940	1719	4886			1565
Flt Permitted	0.95	1.00	0.95	1.00			1.00
Satd. Flow (perm)	1719	4940	1719	4886			1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	195	3120	530	2245	175	0	275
RTOR Reduction (vph)	0	0	0	2	0	0	275
Lane Group Flow (vph)	195	3120	530	2418	0	0	0
Turn Type	Prot	NA	Prot	NA			custom
Protected Phases	1	6	5	2			
Permitted Phases							
Actuated Green, G (s)	30.1	127.0	81.0	177.9			0.0
Effective Green, g (s)	30.1	127.0	81.0	177.9			0.0
Actuated g/C Ratio	0.14	0.58	0.37	0.81			0.00
Clearance Time (s)	6.0	6.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	235	2851	632	3950			0
v/s Ratio Prot	0.11	c0.63	c0.31	0.49			
v/s Ratio Perm							
v/c Ratio	0.83	1.09	0.84	0.61			0.00
Uniform Delay, d1	92.5	46.5	63.5	8.0			110.0
Progression Factor	0.74	0.70	0.72	1.85			1.00
Incremental Delay, d2	2.3	43.1	1.3	0.1			0.0
Delay (s)	71.0	75.8	46.9	14.8			110.0
Level of Service	E	E	D	B			F
Approach Delay (s)		75.5		20.6		110.0	
Approach LOS		E		C		F	

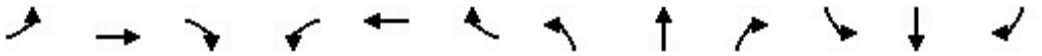
Intersection Summary			
HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	100	165	3100	55	2665	90	0	80
Future Volume (vph)	100	165	3100	55	2665	90	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0			4.0
Lane Util. Factor		1.00	0.91	1.00	0.91			1.00
Frt		1.00	1.00	1.00	1.00			0.86
Flt Protected		0.95	1.00	0.95	1.00			1.00
Satd. Flow (prot)		1719	4940	1719	4916			1565
Flt Permitted		0.95	1.00	0.95	1.00			1.00
Satd. Flow (perm)		1719	4940	1719	4916			1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	100	165	3100	55	2665	90	0	80
RTOR Reduction (vph)	0	0	0	0	1	0	0	80
Lane Group Flow (vph)	0	265	3100	55	2754	0	0	0
Turn Type	Prot	Prot	NA	Prot	NA			custom
Protected Phases	1	1	6	5	2			
Permitted Phases								
Actuated Green, G (s)		39.0	175.6	12.4	149.0			0.0
Effective Green, g (s)		39.0	175.6	12.4	149.0			0.0
Actuated g/C Ratio		0.18	0.80	0.06	0.68			0.00
Clearance Time (s)		6.0	6.0	6.0	6.0			
Vehicle Extension (s)		3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)		304	3943	96	3329			0
v/s Ratio Prot		c0.15	0.63	0.03	c0.56			
v/s Ratio Perm								
v/c Ratio		0.87	0.79	0.57	0.83			0.00
Uniform Delay, d1		88.1	12.0	101.2	26.1			110.0
Progression Factor		0.98	0.72	0.86	0.53			1.00
Incremental Delay, d2		2.7	0.2	5.1	1.6			0.0
Delay (s)		89.4	8.8	92.6	15.3			110.0
Level of Service		F	A	F	B			F
Approach Delay (s)			15.2		16.8		110.0	
Approach LOS			B		B		F	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



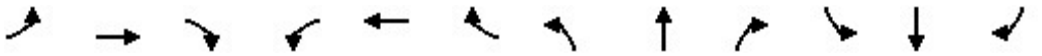
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	255	10	505	295	570	35	1055	725	460	815	30
Future Volume (veh/h)	20	255	10	505	295	570	35	1055	725	460	815	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	20	255	10	505	295	570	35	1055	725	460	815	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	28	403	16	549	485	411	116	1405	627	608	1770	65
Arrive On Green	0.02	0.12	0.12	0.27	0.44	0.44	0.07	0.41	0.41	0.18	0.52	0.52
Sat Flow, veh/h	1739	3404	133	3374	1826	1547	1739	3469	1547	3374	3412	126
Grp Volume(v), veh/h	20	130	135	505	295	570	35	1055	725	460	414	431
Grp Sat Flow(s),veh/h/ln	1739	1735	1802	1687	1826	1547	1739	1735	1547	1687	1735	1803
Q Serve(g_s), s	2.5	15.7	15.8	32.0	27.1	58.4	4.2	57.2	54.8	28.5	33.2	33.2
Cycle Q Clear(g_c), s	2.5	15.7	15.8	32.0	27.1	58.4	4.2	57.2	54.8	28.5	33.2	33.2
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	28	205	213	549	485	411	116	1405	627	608	900	935
V/C Ratio(X)	0.72	0.63	0.64	0.92	0.61	1.39	0.30	0.75	1.16	0.76	0.46	0.46
Avail Cap(c_a), veh/h	66	205	213	649	485	411	116	1405	627	608	900	935
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	107.7	92.4	92.5	78.7	52.5	61.2	97.8	56.0	24.8	85.6	33.5	33.5
Incr Delay (d2), s/veh	12.0	6.1	6.1	2.2	0.2	175.9	0.5	3.7	87.7	5.4	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.5	7.8	13.3	11.5	41.6	1.9	25.6	35.8	12.8	14.5	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.8	98.5	98.5	80.9	52.8	237.1	98.3	59.7	112.4	91.0	35.2	35.1
LnGrp LOS	F	F	F	F	D	F	F	E	F	F	D	D
Approach Vol, veh/h		285			1370			1815			1305	
Approach Delay, s/veh		100.0			139.8			81.5			54.8	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	121.0	11.2	66.0	46.8	96.0	43.5	33.7
Change Period (Y+Rc), s	7.1	* 6.9	* 7.7	* 7.6	7.1	* 6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	9.9	* 1.1E2	* 8.3	* 58	34.9	* 89	* 42	* 24
Max Q Clear Time (g_c+I1), s	6.2	35.2	4.5	60.4	30.5	59.2	34.0	17.8
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.7	8.3	1.8	0.6

Intersection Summary	
HCM 6th Ctrl Delay	92.1
HCM 6th LOS	F

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)	305	1905	140	365	2405	435	220	885	325	505	885	505
Future Volume (veh/h)	305	1905	140	365	2405	435	220	885	325	505	885	505
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	305	1905	140	365	2405	435	220	885	325	505	885	505
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	259	2014	625	366	2173	864	228	787	519	412	976	554
Arrive On Green	0.00	0.54	0.54	0.22	0.87	0.87	0.07	0.23	0.23	0.12	0.28	0.28
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	3469	1547	3374	3469	1547
Grp Volume(v), veh/h	305	1905	140	365	2405	435	220	885	325	505	885	505
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1735	1547	1687	1735	1547
Q Serve(g_s), s	16.9	79.1	8.1	23.8	95.9	14.2	14.3	49.9	10.9	26.9	54.1	61.9
Cycle Q Clear(g_c), s	16.9	79.1	8.1	23.8	95.9	14.2	14.3	49.9	10.9	26.9	54.1	61.9
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	259	2014	625	366	2173	864	228	787	519	412	976	554
V/C Ratio(X)	1.18	0.95	0.22	1.00	1.11	0.50	0.96	1.12	0.63	1.22	0.91	0.91
Avail Cap(c_a), veh/h	259	2014	625	366	2173	864	228	787	519	412	976	554
HCM Platoon Ratio	0.00	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	110.0	48.6	19.4	86.1	14.1	5.6	102.3	85.1	31.3	96.6	76.3	67.3
Incr Delay (d2), s/veh	94.1	4.8	0.3	45.8	55.5	2.1	48.7	72.2	1.8	120.8	11.6	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	31.7	2.9	11.8	16.8	3.0	7.8	30.1	9.8	18.7	25.5	29.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	204.1	53.4	19.7	131.9	69.6	7.7	150.9	157.2	33.1	217.4	87.9	86.2
LnGrp LOS	F	D	B	F	F	A	F	F	C	F	F	F
Approach Vol, veh/h		2350			3205			1430			1895	
Approach Delay, s/veh		71.0			68.3			128.0			121.9	
Approach LOS		E			E			F			F	

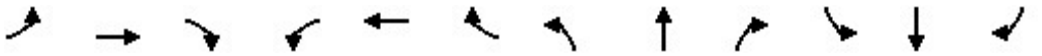
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	103.0	35.0	58.0	31.0	96.0	23.0	70.0
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 17	* 96	* 27	* 50	* 24	* 89	* 15	* 62
Max Q Clear Time (g_c+I1), s	18.9	97.9	28.9	51.9	25.8	81.1	16.3	63.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	90.1
HCM 6th LOS	F

Notes

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

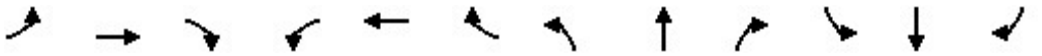
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2140	680	0	3190	275	155	265	270	130	210	110
Future Volume (veh/h)	0	2140	680	0	3190	275	155	265	270	130	210	110
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	0	1826	1826	0	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	0	2140	680	0	3190	275	155	265	270	130	210	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	5	5	0	5	5	5	5	5	5	5	5
Cap, veh/h	0	2168	635	0	2654	223	213	217	222	109	281	147
Arrive On Green	0.00	1.00	1.00	0.00	1.00	1.00	0.06	0.26	0.26	0.04	0.25	0.25
Sat Flow, veh/h	0	3947	1081	0	4774	379	1739	829	845	1739	1128	591
Grp Volume(v), veh/h	0	1793	1027	0	2191	1274	155	0	535	130	0	320
Grp Sat Flow(s),veh/h/ln	0	1570	1631	0	1570	1758	1739	0	1674	1739	0	1720
Q Serve(g_s), s	0.0	0.0	129.2	0.0	129.2	124.0	12.7	0.0	57.7	9.7	0.0	37.8
Cycle Q Clear(g_c), s	0.0	0.0	129.2	0.0	129.2	124.0	12.7	0.0	57.7	9.7	0.0	37.8
Prop In Lane	0.00		0.66	0.00		0.22	1.00		0.50	1.00		0.34
Lane Grp Cap(c), veh/h	0	1844	958	0	1844	1032	213	0	439	109	0	428
V/C Ratio(X)	0.00	0.97	1.07	0.00	1.19	1.23	0.73	0.00	1.22	1.19	0.00	0.75
Avail Cap(c_a), veh/h	0	1844	958	0	1844	1032	213	0	439	109	0	428
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.64	0.64	0.00	0.17	0.17	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	66.6	0.0	81.2	66.2	0.0	76.3
Incr Delay (d2), s/veh	0.0	11.4	45.1	0.0	85.6	106.9	10.5	0.0	117.5	145.3	0.0	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	12.0	0.0	21.9	30.7	3.2	0.0	39.4	9.0	0.0	17.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.4	45.1	0.0	85.6	106.9	77.1	0.0	198.7	211.5	0.0	83.4
LnGrp LOS	A	B	F	A	F	F	E	A	F	F	A	F
Approach Vol, veh/h		2820			3465			690			450	
Approach Delay, s/veh		23.7			93.5			171.4			120.4	
Approach LOS		C			F			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		136.0	18.0	66.0		136.0	21.0	63.0				
Change Period (Y+Rc), s		6.8	8.3	8.3		6.8	8.3	8.3				
Max Green Setting (Gmax), s		129.2	9.7	57.7		129.2	12.7	54.7				
Max Q Clear Time (g_c+I1), s		131.2	11.7	59.7		131.2	14.7	39.8				
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.9				

Intersection Summary												
HCM 6th Ctrl Delay			75.8									
HCM 6th LOS			E									



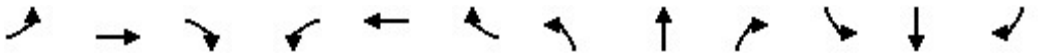
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1625	675	0	2995	95	135	155	645	95	195	45
Future Volume (veh/h)	0	1625	675	0	2995	95	135	155	645	95	195	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	0	1826	1826	0	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	0	1625	675	0	2995	95	135	155	645	95	195	45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	5	5	0	5	5	5	5	5	5	5	5
Cap, veh/h	0	2168	862	0	3072	96	274	434	387	96	210	48
Arrive On Green	0.00	0.20	0.20	0.00	1.00	1.00	0.13	0.25	0.25	0.04	0.15	0.15
Sat Flow, veh/h	0	3669	1393	0	5129	156	1739	1735	1547	1739	1435	331
Grp Volume(v), veh/h	0	1537	763	0	1994	1096	135	155	645	95	0	240
Grp Sat Flow(s),veh/h/ln	0	1662	1575	0	1662	1798	1739	1735	1547	1739	0	1766
Q Serve(g_s), s	0.0	95.6	101.0	0.0	0.0	0.0	9.8	16.2	55.0	8.0	0.0	29.5
Cycle Q Clear(g_c), s	0.0	95.6	101.0	0.0	0.0	0.0	9.8	16.2	55.0	8.0	0.0	29.5
Prop In Lane	0.00		0.88	0.00		0.09	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	0	2056	974	0	2056	1112	274	434	387	96	0	258
V/C Ratio(X)	0.00	0.75	0.78	0.00	0.97	0.99	0.49	0.36	1.67	0.99	0.00	0.93
Avail Cap(c_a), veh/h	0	2056	974	0	2056	1112	274	434	387	96	0	385
HCM Platoon Ratio	1.00	0.33	0.33	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.74	0.00	0.51	0.51	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	71.4	73.6	0.0	0.0	0.0	85.5	67.9	82.5	70.7	0.0	92.8
Incr Delay (d2), s/veh	0.0	1.9	4.7	0.0	8.8	16.1	1.4	0.5	311.5	88.5	0.0	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	43.5	44.4	0.0	2.5	5.0	7.2	7.4	55.6	4.0	0.0	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	73.3	78.3	0.0	8.8	16.1	86.9	68.4	394.0	159.2	0.0	114.9
LnGrp LOS	A	E	E	A	A	B	F	E	F	F	A	F
Approach Vol, veh/h		2300			3090			935			335	
Approach Delay, s/veh		74.9			11.4			295.7			127.5	
Approach LOS		E			B			F			F	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		143.0	14.0	63.0		143.0	36.8	40.2				
Change Period (Y+Rc), s		6.9	6.0	* 8		6.9	* 8	* 8				
Max Green Setting (Gmax), s		136.1	8.0	* 55		136.1	* 15	* 48				
Max Q Clear Time (g_c+I1), s		2.0	10.0	57.0		103.0	11.8	31.5				
Green Ext Time (p_c), s		55.7	0.0	0.0		17.4	0.1	0.6				

Intersection Summary	
HCM 6th Ctrl Delay	79.1
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)	0	2255	0	0	3055	335	0	0	0	310	0	60
Future Volume (veh/h)	0	2255	0	0	3055	335	0	0	0	310	0	60
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	0	1826	1826	0	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	0	2255	0	0	3055	335	0	0	0	366	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	0	5	5	0	5	5	5	5	5	5	5	5
Cap, veh/h	0	4057	0	0	4057	1259	0	1	1	407	214	0
Arrive On Green	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	0	5313	0	0	5149	1547	0	1826	1547	3478	1826	0
Grp Volume(v), veh/h	0	2255	0	0	3055	335	0	0	0	366	0	0
Grp Sat Flow(s),veh/h/ln	0	1662	0	0	1662	1547	0	1826	1547	1739	1826	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.8	0.0	0.0
Prop In Lane	0.00		0.00	0.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	4057	0	0	4057	1259	0	1	1	407	214	0
V/C Ratio(X)	0.00	0.56	0.00	0.00	0.75	0.27	0.00	0.00	0.00	0.90	0.00	0.00
Avail Cap(c_a), veh/h	0	4057	0	0	4057	1259	0	138	117	531	279	0
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.09	0.09	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	95.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	15.1	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	111.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	F	A	A
Approach Vol, veh/h		2255			3390			0			366	
Approach Delay, s/veh		0.6			0.1			0.0			111.0	
Approach LOS		A			A						F	

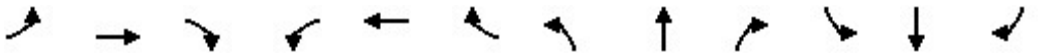
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		185.8		0.0		185.8		34.2				
Change Period (Y+Rc), s		6.8		* 8.4		6.8		8.4				
Max Green Setting (Gmax), s		146.2		* 17		146.2		33.6				
Max Q Clear Time (g_c+I1), s		2.0		0.0		2.0		24.8				
Green Ext Time (p_c), s		75.2		0.0		25.1		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

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.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	2085	595	220	2220	20	680	125	785	105	230	170
Future Volume (veh/h)	225	2085	595	220	2220	20	680	125	785	105	230	170
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	225	2085	0	220	2220	20	680	125	785	105	230	170
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	207	2225		356	2157	670	590	320	764	224	236	200
Arrive On Green	0.12	0.45	0.00	0.14	0.58	0.58	0.17	0.17	0.17	0.13	0.13	0.13
Sat Flow, veh/h	1739	4985	1547	3374	4985	1547	3374	1826	2723	1739	1826	1547
Grp Volume(v), veh/h	225	2085	0	220	2220	20	680	125	785	105	230	170
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1687	1662	1547	1687	1826	1362	1739	1826	1547
Q Serve(g_s), s	26.2	87.6	0.0	13.5	95.2	1.2	38.5	13.3	38.5	12.3	27.6	23.6
Cycle Q Clear(g_c), s	26.2	87.6	0.0	13.5	95.2	1.2	38.5	13.3	38.5	12.3	27.6	23.6
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	207	2225		356	2157	670	590	320	764	224	236	200
V/C Ratio(X)	1.09	0.94		0.62	1.03	0.03	1.15	0.39	1.03	0.47	0.98	0.85
Avail Cap(c_a), veh/h	207	2225		356	2157	670	590	320	764	224	236	200
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.40	0.40	0.40	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	96.9	58.0	0.0	90.4	46.7	26.7	90.8	80.4	79.2	88.8	95.5	93.7
Incr Delay (d2), s/veh	47.0	1.0	0.0	1.3	20.6	0.0	86.6	0.8	39.9	1.5	51.6	27.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	36.1	0.0	5.8	39.5	0.5	23.9	6.4	17.4	5.7	16.7	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.9	59.0	0.0	91.7	67.3	26.8	177.3	81.2	119.0	90.3	147.1	121.6
LnGrp LOS	F	E		F	F	C	F	F	F	F	F	F
Approach Vol, veh/h		2310			2460			1590			505	
Approach Delay, s/veh		67.3			69.2			141.0			126.7	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	103.0		46.0	31.0	106.0		37.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 26	* 95		* 39	* 23	* 98		28.4				
Max Q Clear Time (g_c+I1), s	28.2	97.2		40.5	15.5	89.6		29.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.4	6.3		0.0				

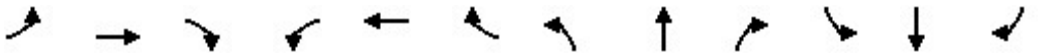
Intersection Summary		
HCM 6th Ctrl Delay		89.4
HCM 6th LOS		F

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.



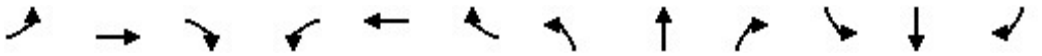
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	3215	15	10	2340	250	10	5	10	295	5	250
Future Volume (veh/h)	195	3215	15	10	2340	250	10	5	10	295	5	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	195	3215	15	10	2340	250	10	5	10	295	5	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	302	3311	1028	18	2916	905	23	14	9	189	3	334
Arrive On Green	0.18	1.00	1.00	0.02	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3374	4985	1547	1739	4985	1547	0	65	43	726	12	1547
Grp Volume(v), veh/h	195	3215	15	10	2340	250	25	0	0	300	0	250
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1739	1662	1547	108	0	0	739	0	1547
Q Serve(g_s), s	11.8	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.2
Cycle Q Clear(g_c), s	11.8	0.0	0.0	1.3	0.0	0.0	47.5	0.0	0.0	47.5	0.0	33.2
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.40	0.98		1.00
Lane Grp Cap(c), veh/h	302	3311	1028	18	2916	905	46	0	0	192	0	334
V/C Ratio(X)	0.65	0.97	0.01	0.55	0.80	0.28	0.54	0.00	0.00	1.56	0.00	0.75
Avail Cap(c_a), veh/h	302	3311	1028	69	2916	905	46	0	0	192	0	334
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)	1.00	1.00	1.00	0.61	0.61	0.61	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	87.1	0.0	0.0	107.2	0.0	0.0	73.1	0.0	0.0	90.3	0.0	80.7
Incr Delay (d2), s/veh	4.7	10.2	0.0	15.1	1.5	0.5	12.3	0.0	0.0	277.2	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.1	0.0	0.6	0.4	0.1	1.3	0.0	0.0	26.0	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	10.2	0.0	122.3	1.5	0.5	85.4	0.0	0.0	367.5	0.0	89.6
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		3425			2600			25			550	
Approach Delay, s/veh		14.8			1.9			85.4			241.2	
Approach LOS		B			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	136.0		57.0	9.6	153.4		57.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 20	* 1.3E2		47.5	* 8.7	* 1.4E2		47.5				
Max Q Clear Time (g_c+I1), s	13.8	2.0		49.5	3.3	2.0		49.5				
Green Ext Time (p_c), s	0.3	30.8		0.0	0.0	72.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		28.9	
HCM 6th LOS		C	

Notes

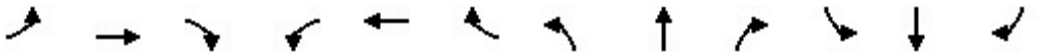
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	3270	100	85	2275	240	130	115	95	305	125	195
Future Volume (veh/h)	150	3270	100	85	2275	240	130	115	95	305	125	195
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	150	3270	100	85	2275	240	130	115	95	305	125	195
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	235	2986	927	70	2513	780	244	239	197	405	472	400
Arrive On Green	0.27	1.00	1.00	0.05	0.67	0.67	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	1034	925	764	2219	1826	1547
Grp Volume(v), veh/h	150	3270	100	85	2275	240	130	0	210	305	125	195
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	1034	0	1688	1110	1826	1547
Q Serve(g_s), s	16.7	131.8	0.0	8.9	84.2	14.2	25.2	0.0	23.2	29.7	12.0	23.5
Cycle Q Clear(g_c), s	16.7	131.8	0.0	8.9	84.2	14.2	37.2	0.0	23.2	52.9	12.0	23.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	235	2986	927	70	2513	780	244	0	436	405	472	400
V/C Ratio(X)	0.64	1.10	0.11	1.21	0.91	0.31	0.53	0.00	0.48	0.75	0.27	0.49
Avail Cap(c_a), veh/h	235	2986	927	70	2513	780	285	0	504	494	545	462
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.19	0.19	0.19	0.28	0.28	0.28	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.5	0.0	0.0	104.1	31.9	20.3	79.8	0.0	69.1	91.5	65.0	69.2
Incr Delay (d2), s/veh	1.1	44.1	0.0	124.9	1.8	0.3	1.8	0.0	0.8	5.2	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.2	0.0	6.4	29.6	4.8	6.9	0.0	10.3	8.9	5.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	44.1	0.0	229.0	33.7	20.6	81.6	0.0	69.9	96.7	65.3	70.2
LnGrp LOS	E	F	A	F	C	C	F	A	E	F	E	E
Approach Vol, veh/h		3520			2600			340			625	
Approach Delay, s/veh		44.2			38.9			74.4			82.1	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.9	118.0		65.1	16.0	138.9		65.1				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	20.9	110.9		65.7	8.9	122.9		65.7				
Max Q Clear Time (g_c+I1), s	18.7	86.2		39.2	10.9	133.8		54.9				
Green Ext Time (p_c), s	0.1	15.9		1.2	0.0	0.0		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			47.1									
HCM 6th LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	605	2605	455	325	1885	175	360	1095	325	410	620	355
Future Volume (veh/h)	605	2605	455	325	1885	175	360	1095	325	410	620	355
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	605	2605	455	325	1885	175	360	1095	325	410	620	355
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	580	2171	674	319	1785	554	858	787	497	320	732	493
Arrive On Green	0.34	0.87	0.87	0.09	0.36	0.36	0.17	0.23	0.23	0.09	0.15	0.15
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	4904	3469	1547	3374	4985	1547
Grp Volume(v), veh/h	605	2605	455	325	1885	175	360	1095	325	410	620	355
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1635	1735	1547	1687	1662	1547
Q Serve(g_s), s	37.8	95.8	20.3	20.8	78.8	18.0	14.4	49.9	14.6	20.9	26.7	25.9
Cycle Q Clear(g_c), s	37.8	95.8	20.3	20.8	78.8	18.0	14.4	49.9	14.6	20.9	26.7	25.9
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	580	2171	674	319	1785	554	858	787	497	320	732	493
V/C Ratio(X)	1.04	1.20	0.68	1.02	1.06	0.32	0.42	1.39	0.65	1.28	0.85	0.72
Avail Cap(c_a), veh/h	580	2171	674	319	1785	554	858	787	497	320	1221	645
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	14.2	9.3	99.6	70.6	51.1	80.8	85.1	37.8	99.5	91.4	28.7
Incr Delay (d2), s/veh	24.9	90.5	0.5	55.3	37.8	1.5	0.3	184.0	3.1	147.6	3.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	23.8	3.6	11.5	39.1	7.3	6.1	42.3	5.3	15.8	11.7	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.1	104.7	9.8	154.9	108.4	52.6	81.1	269.0	40.9	247.1	94.4	31.4
LnGrp LOS	F	F	A	F	F	D	F	F	D	F	F	C
Approach Vol, veh/h		3665			2385			1780			1385	
Approach Delay, s/veh		91.7			110.6			189.4			123.5	
Approach LOS		F			F			F			F	

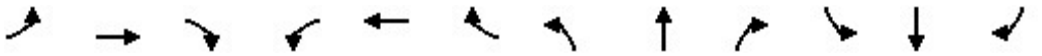
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.0	87.0	29.0	58.0	29.0	104.0	46.6	40.4
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	37.8	78.8	* 21	* 50	20.8	95.8	* 17	* 54
Max Q Clear Time (g_c+I1), s	39.8	80.8	22.9	51.9	22.8	97.8	16.4	28.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	120.2
HCM 6th LOS	F

Notes

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

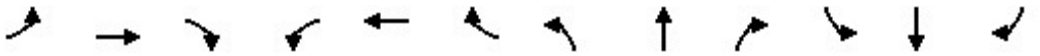
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
Future Volume (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (prot)		3438	1538	1564	3234					1633	1664	1538
Flt Permitted		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (perm)		3438	1538	1564	3234					1633	1664	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	0	0	0	126
Lane Group Flow (vph)	0	960	379	906	1854	0	0	0	0	285	285	74
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		46.9	46.9	117.4	117.4					32.4	32.4	32.4
Effective Green, g (s)		46.9	46.9	117.4	117.4					32.4	32.4	32.4
Actuated g/C Ratio		0.21	0.21	0.53	0.53					0.15	0.15	0.15
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		732	327	834	1725					240	245	226
v/s Ratio Prot		c0.28		c0.58	0.57					c0.17	0.17	
v/s Ratio Perm			0.25									0.05
v/c Ratio		1.31	1.16	1.09	1.07					1.19	1.16	0.33
Uniform Delay, d1		86.5	86.5	51.3	51.3					93.8	93.8	84.0
Progression Factor		1.09	1.15	0.39	0.14					1.00	1.00	1.00
Incremental Delay, d2		145.4	88.5	41.2	35.0					118.3	108.8	0.8
Delay (s)		240.1	188.1	61.1	42.4					212.1	202.6	84.9
Level of Service		F	F	E	D					F	F	F
Approach Delay (s)		222.9			48.5			0.0			175.5	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	118.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	116.8%	ICU Level of Service	H
Analysis Period (min)	15		

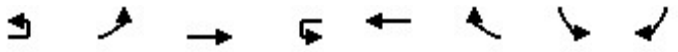
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
Future Volume (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3396			4940	1538	1633	1334	2799			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3396			4940	1538	1633	1334	2799			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	221	32	0	0	0
Lane Group Flow (vph)	0	1430	0	0	2470	498	265	215	832	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		87.4			82.5	82.5	28.4	28.4	117.4			
Effective Green, g (s)		87.4			82.5	82.5	28.4	28.4	117.4			
Actuated g/C Ratio		0.40			0.38	0.38	0.13	0.13	0.53			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1349			1852	576	210	172	1493			
v/s Ratio Prot		c0.42			c0.50		c0.16	0.16	0.30			
v/s Ratio Perm						0.32						
v/c Ratio		1.06			1.33	0.86	1.26	1.25	0.56			
Uniform Delay, d1		66.3			68.8	63.6	95.8	95.8	34.1			
Progression Factor		0.29			0.66	0.44	1.00	1.00	1.00			
Incremental Delay, d2		29.0			150.5	1.7	150.3	150.9	0.5			
Delay (s)		48.1			195.8	29.5	246.1	246.7	34.5			
Level of Service		D			F	C	F	F	C			
Approach Delay (s)		48.1			160.7			129.4			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	126.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	121.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	295	95	1950	290	2850	35	60	95
Future Volume (vph)	295	95	1950	290	2850	35	60	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor		1.00	0.91	1.00	0.91		1.00	1.00
Frt		1.00	1.00	1.00	1.00		1.00	0.85
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)		1719	4940	1719	4931		1719	1538
Flt Permitted		0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (perm)		1719	4940	1719	4931		1719	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	295	95	1950	290	2850	35	60	95
RTOR Reduction (vph)	0	0	0	0	0	0	0	71
Lane Group Flow (vph)	0	390	1950	290	2885	0	60	24
Turn Type	Prot	Prot	NA	Prot	NA		Prot	Perm
Protected Phases	1	1	6	5	2		8	
Permitted Phases								8
Actuated Green, G (s)		56.0	150.0	40.0	134.0		12.0	12.0
Effective Green, g (s)		56.0	150.0	40.0	134.0		12.0	12.0
Actuated g/C Ratio		0.25	0.68	0.18	0.61		0.05	0.05
Clearance Time (s)		6.0	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		437	3368	312	3003		93	83
v/s Ratio Prot		c0.23	0.39	0.17	c0.58		c0.03	
v/s Ratio Perm								0.02
v/c Ratio		0.89	0.58	0.93	0.96		0.65	0.29
Uniform Delay, d1		79.1	18.4	88.6	40.5		101.9	99.9
Progression Factor		0.95	0.48	0.66	1.81		1.00	1.00
Incremental Delay, d2		17.2	0.6	12.1	3.1		14.3	1.9
Delay (s)		92.2	9.5	70.6	76.3		116.3	101.8
Level of Service		F	A	E	E		F	F
Approach Delay (s)			23.3		75.8		107.4	
Approach LOS			C		E		F	

Intersection Summary			
HCM 2000 Control Delay	55.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	60	65	2215	30	150	2915	100	0	0	25	0	0
Future Volume (vph)	60	65	2215	30	150	2915	100	0	0	25	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0	6.0				6.0		
Lane Util. Factor		1.00	0.91		1.00	0.91				1.00		
Frt		1.00	1.00		1.00	1.00				0.86		
Flt Protected		0.95	1.00		0.95	1.00				1.00		
Satd. Flow (prot)		1719	4930		1719	4915				1565		
Flt Permitted		0.95	1.00		0.95	1.00				1.00		
Satd. Flow (perm)		1719	4930		1719	4915				1565		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	65	2215	30	150	2915	100	0	0	25	0	0
RTOR Reduction (vph)	0	0	1	0	0	1	0	0	0	24	0	0
Lane Group Flow (vph)	0	125	2244	0	150	3014	0	0	0	1	0	0
Turn Type	Prot	Prot	NA		Prot	NA				Perm		
Protected Phases	1	1	6		5	2						
Permitted Phases										4		
Actuated Green, G (s)		20.5	163.5		26.5	169.5				12.0		
Effective Green, g (s)		20.5	163.5		26.5	169.5				12.0		
Actuated g/C Ratio		0.09	0.74		0.12	0.77				0.05		
Clearance Time (s)		6.0	6.0		6.0	6.0				6.0		
Vehicle Extension (s)		3.0	3.0		3.0	3.0				3.0		
Lane Grp Cap (vph)		160	3663		207	3786				85		
v/s Ratio Prot		0.07	0.46		c0.09	c0.61						
v/s Ratio Perm										0.00		
v/c Ratio		0.78	0.61		0.72	0.80				0.02		
Uniform Delay, d1		97.6	13.3		93.2	15.0				98.4		
Progression Factor		1.09	1.28		1.18	0.53				1.00		
Incremental Delay, d2		11.7	0.4		8.3	1.2				0.1		
Delay (s)		117.7	17.5		118.7	9.2				98.5		
Level of Service		F	B		F	A				F		
Approach Delay (s)			22.8			14.4			98.5			107.7
Approach LOS			C			B			F			F

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	125
Future Volume (vph)	125
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.0
Lane Util. Factor	1.00
Frt	0.86
Flt Protected	1.00
Satd. Flow (prot)	1565
Flt Permitted	1.00
Satd. Flow (perm)	1565
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	125
RTOR Reduction (vph)	79
Lane Group Flow (vph)	46
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	12.0
Effective Green, g (s)	12.0
Actuated g/C Ratio	0.05
Clearance Time (s)	6.0
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	85
v/s Ratio Prot	
v/s Ratio Perm	c0.03
v/c Ratio	0.54
Uniform Delay, d1	101.3
Progression Factor	1.00
Incremental Delay, d2	6.4
Delay (s)	107.7
Level of Service	F
Approach Delay (s)	
Approach LOS	

Intersection Summary

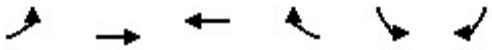
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	215	595	1470	280	210	1895	965	440	1060	310	1125	1090
Future Volume (vph)	215	595	1470	280	210	1895	965	440	1060	310	1125	1090
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.4	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.6	7.6
Lane Util. Factor		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95
Frt		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	3438
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)		3335	4940	1538	3335	4940	1538	3335	4940	1538	3335	3438
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	595	1470	280	210	1895	965	440	1060	310	1125	1090
RTOR Reduction (vph)	0	0	0	93	0	0	287	0	0	106	0	0
Lane Group Flow (vph)	0	810	1470	187	210	1895	678	440	1060	204	1125	1090
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	1	6		5	2		7	4		3	8
Permitted Phases				6			2			4		
Actuated Green, G (s)		32.6	85.2	85.2	16.0	68.6	68.6	18.4	45.4	45.4	43.4	70.4
Effective Green, g (s)		32.6	85.2	85.2	16.0	68.6	68.6	18.4	45.4	45.4	43.4	70.4
Actuated g/C Ratio		0.15	0.39	0.39	0.07	0.31	0.31	0.08	0.21	0.21	0.20	0.32
Clearance Time (s)		7.4	7.4	7.4	7.4	7.4	7.4	7.6	7.6	7.6	7.6	7.6
Vehicle Extension (s)		3.0	3.0	3.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		494	1913	595	242	1540	479	278	1019	317	657	1100
v/s Ratio Prot		c0.24	0.30		0.06	0.38		c0.13	0.21		c0.34	0.32
v/s Ratio Perm				0.12			c0.44			0.13		
v/c Ratio		1.64	0.77	0.31	0.87	1.23	1.42	1.58	1.04	0.64	1.71	0.99
Uniform Delay, d1		93.7	58.8	47.0	101.0	75.7	75.7	100.8	87.3	79.9	88.3	74.5
Progression Factor		0.80	0.71	0.68	1.25	0.81	0.58	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		295.3	2.5	1.1	3.1	104.3	188.1	278.8	39.2	4.5	327.0	24.8
Delay (s)		369.9	44.4	33.2	129.1	165.6	232.4	379.6	126.5	84.4	415.3	99.3
Level of Service		F	D	C	F	F	F	F	F	F	F	F
Approach Delay (s)			146.2			184.1			180.8			276.5
Approach LOS			F			F			F			F

Intersection Summary			
HCM 2000 Control Delay	201.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	30.0
Intersection Capacity Utilization	149.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	840
Future Volume (vph)	840
Ideal Flow (vphpl)	1900
Total Lost time (s)	7.6
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1538
Flt Permitted	1.00
Satd. Flow (perm)	1538
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	840
RTOR Reduction (vph)	90
Lane Group Flow (vph)	750
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Actuated Green, G (s)	70.4
Effective Green, g (s)	70.4
Actuated g/C Ratio	0.32
Clearance Time (s)	7.6
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	492
v/s Ratio Prot	
v/s Ratio Perm	c0.49
v/c Ratio	1.52
Uniform Delay, d1	74.8
Progression Factor	1.00
Incremental Delay, d2	245.8
Delay (s)	320.6
Level of Service	F
Approach Delay (s)	
Approach LOS	

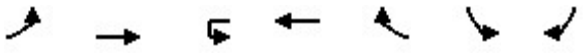
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	340	2635	2155	450	725	305
Future Volume (vph)	340	2635	2155	450	725	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	4940	4940	1538	3335	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	4940	4940	1538	3335	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	2635	2155	450	725	305
RTOR Reduction (vph)	0	0	0	76	0	1
Lane Group Flow (vph)	340	2635	2155	374	725	304
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	38.1	151.4	105.4	105.4	50.7	98.8
Effective Green, g (s)	38.1	151.4	105.4	105.4	50.7	98.8
Actuated g/C Ratio	0.17	0.69	0.48	0.48	0.23	0.45
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	577	3399	2366	736	768	690
v/s Ratio Prot	0.10	c0.53	c0.44		c0.22	0.20
v/s Ratio Perm				0.24		
v/c Ratio	0.59	0.78	0.91	0.51	0.94	0.44
Uniform Delay, d1	83.7	22.9	53.0	39.5	83.3	41.6
Progression Factor	1.36	0.54	0.48	0.46	1.00	1.00
Incremental Delay, d2	0.4	0.5	4.3	1.5	19.9	0.5
Delay (s)	113.9	12.9	29.9	19.9	103.2	42.1
Level of Service	F	B	C	B	F	D
Approach Delay (s)		24.4	28.1		85.1	
Approach LOS		C	C		F	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

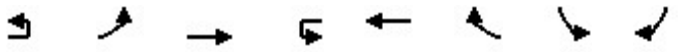
c Critical Lane Group



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	185	2550	275	2990	190	0	215
Future Volume (vph)	185	2550	275	2990	190	0	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0			4.0
Lane Util. Factor	1.00	0.91	1.00	0.91			1.00
Frt	1.00	1.00	1.00	0.99			0.86
Flt Protected	0.95	1.00	0.95	1.00			1.00
Satd. Flow (prot)	1719	4940	1719	4896			1565
Flt Permitted	0.95	1.00	0.95	1.00			1.00
Satd. Flow (perm)	1719	4940	1719	4896			1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	185	2550	275	2990	190	0	215
RTOR Reduction (vph)	0	0	0	2	0	0	215
Lane Group Flow (vph)	185	2550	275	3178	0	0	0
Turn Type	Prot	NA	Prot	NA			custom
Protected Phases	1	6	5	2			
Permitted Phases							
Actuated Green, G (s)	27.2	161.8	46.2	180.8			0.0
Effective Green, g (s)	27.2	161.8	46.2	180.8			0.0
Actuated g/C Ratio	0.12	0.74	0.21	0.82			0.00
Clearance Time (s)	6.0	6.0	6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0			
Lane Grp Cap (vph)	212	3633	360	4023			0
v/s Ratio Prot	c0.11	0.52	c0.16	c0.65			
v/s Ratio Perm							
v/c Ratio	0.87	0.70	0.76	0.79			0.00
Uniform Delay, d1	94.7	15.9	81.8	10.0			110.0
Progression Factor	0.92	0.57	1.17	0.33			1.00
Incremental Delay, d2	11.9	0.4	0.9	0.2			0.0
Delay (s)	98.7	9.5	96.6	3.4			110.0
Level of Service	F	A	F	A			F
Approach Delay (s)		15.5		10.9		110.0	
Approach LOS		B		B		F	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

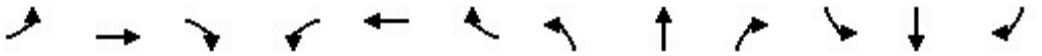
c Critical Lane Group



Movement	EBU	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations								
Traffic Volume (vph)	130	80	2335	0	3110	40	0	225
Future Volume (vph)	130	80	2335	0	3110	40	0	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0			6.0
Lane Util. Factor		1.00	0.91		0.91			1.00
Frt		1.00	1.00		1.00			0.86
Flt Protected		0.95	1.00		1.00			1.00
Satd. Flow (prot)		1719	4940		4931			1565
Flt Permitted		0.95	1.00		1.00			1.00
Satd. Flow (perm)		1719	4940		4931			1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	130	80	2335	0	3110	40	0	225
RTOR Reduction (vph)	0	0	0	0	1	0	0	54
Lane Group Flow (vph)	0	210	2335	0	3149	0	0	171
Turn Type	Prot	Prot	NA	Prot	NA			Perm
Protected Phases	1	1	6	5	2			
Permitted Phases								8
Actuated Green, G (s)		31.0	182.0		145.0			26.0
Effective Green, g (s)		31.0	182.0		145.0			26.0
Actuated g/C Ratio		0.14	0.83		0.66			0.12
Clearance Time (s)		6.0	6.0		6.0			6.0
Vehicle Extension (s)		3.0	3.0		3.0			3.0
Lane Grp Cap (vph)		242	4086		3249			184
v/s Ratio Prot		c0.12	0.47		c0.64			
v/s Ratio Perm								c0.11
v/c Ratio		0.87	0.57		0.97			0.93
Uniform Delay, d1		92.5	6.2		35.4			96.1
Progression Factor		1.09	0.50		0.43			1.00
Incremental Delay, d2		3.2	0.1		5.9			50.2
Delay (s)		104.0	3.2		21.2			146.3
Level of Service		F	A		C			F
Approach Delay (s)			11.5		21.2		146.3	
Approach LOS			B		C		F	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



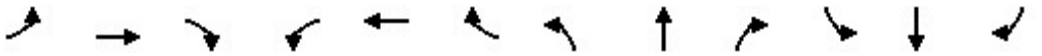
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	305	30	690	250	565	15	725	595	490	1115	45
Future Volume (veh/h)	30	305	30	690	250	565	15	725	595	490	1115	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	30	305	30	690	250	565	15	725	595	490	1115	45
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	272	336	33	746	311	264	24	1331	594	526	1788	72
Arrive On Green	0.16	0.11	0.11	0.07	0.06	0.06	0.01	0.38	0.38	0.16	0.53	0.53
Sat Flow, veh/h	1739	3193	312	3374	1826	1547	1739	3469	1547	3374	3399	137
Grp Volume(v), veh/h	30	165	170	690	250	565	15	725	595	490	569	591
Grp Sat Flow(s),veh/h/ln	1739	1735	1770	1687	1826	1547	1739	1735	1547	1687	1735	1801
Q Serve(g_s), s	3.3	20.7	21.0	44.7	29.8	27.4	1.9	35.8	84.4	31.6	50.9	50.9
Cycle Q Clear(g_c), s	3.3	20.7	21.0	44.7	29.8	27.4	1.9	35.8	84.4	31.6	50.9	50.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	272	183	186	746	311	264	24	1331	594	526	913	948
V/C Ratio(X)	0.11	0.90	0.91	0.92	0.80	2.14	0.63	0.54	1.00	0.93	0.62	0.62
Avail Cap(c_a), veh/h	272	192	196	802	568	481	70	1331	594	581	913	948
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	0.32	0.32	0.32	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.6	97.3	97.4	100.1	100.2	55.5	108.0	52.8	67.8	91.7	36.8	36.8
Incr Delay (d2), s/veh	0.1	37.7	39.9	6.4	2.3	518.8	9.9	1.6	37.4	20.8	3.2	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	11.3	11.8	21.2	15.0	49.5	0.9	15.9	39.7	15.3	22.3	23.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	135.0	137.4	106.5	102.5	574.3	117.8	54.4	105.2	112.5	40.0	39.9
LnGrp LOS	E	F	F	F	F	F	F	D	F	F	D	D
Approach Vol, veh/h		365			1505			1335			1650	
Approach Delay, s/veh		131.6			281.5			77.7			61.5	
Approach LOS		F			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	122.7	42.2	45.1	41.4	91.3	56.4	30.9
Change Period (Y+Rc), s	* 7.1	6.9	* 7.7	* 7.6	* 7.1	6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	* 8.9	105.1	* 8.3	* 68	* 38	76.1	* 52	* 24
Max Q Clear Time (g_c+I1), s	3.9	52.9	5.3	31.8	33.6	86.4	46.7	23.0
Green Ext Time (p_c), s	0.0	3.9	0.0	5.7	0.8	0.0	1.9	0.2

Intersection Summary	
HCM 6th Ctrl Delay	139.4
HCM 6th LOS	F

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)	370	2560	130	410	1755	440	235	720	250	510	1110	390
Future Volume (veh/h)	370	2560	130	410	1755	440	235	720	250	510	1110	390
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	370	2560	130	410	1755	440	235	720	250	510	1110	390
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	401	2380	120	382	1896	820	228	740	505	505	1023	640
Arrive On Green	0.04	0.13	0.13	0.08	0.25	0.25	0.07	0.21	0.21	0.15	0.29	0.29
Sat Flow, veh/h	3374	6168	312	3374	4985	1547	3374	3469	1547	3374	3469	1547
Grp Volume(v), veh/h	370	1953	737	410	1755	440	235	720	250	510	1110	390
Grp Sat Flow(s),veh/h/ln	1687	1570	1770	1687	1662	1547	1687	1735	1547	1687	1735	1547
Q Serve(g_s), s	24.1	84.9	84.9	24.9	75.5	43.7	14.9	45.3	7.9	32.9	64.9	43.5
Cycle Q Clear(g_c), s	24.1	84.9	84.9	24.9	75.5	43.7	14.9	45.3	7.9	32.9	64.9	43.5
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	401	1818	683	382	1896	820	228	740	505	505	1023	640
V/C Ratio(X)	0.92	1.07	1.08	1.07	0.93	0.54	1.03	0.97	0.50	1.01	1.08	0.61
Avail Cap(c_a), veh/h	412	1818	683	382	1896	820	228	740	505	505	1023	640
HCM Platoon Ratio	0.33	0.33	0.33	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.25	0.25	0.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	104.7	96.0	96.0	101.7	78.9	41.6	102.6	85.9	27.5	93.5	77.6	50.5
Incr Delay (d2), s/veh	8.7	36.7	43.0	67.1	9.3	2.5	67.1	26.4	0.3	42.8	54.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.5	42.4	49.0	14.7	34.7	18.1	8.7	22.9	6.6	17.3	36.3	17.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.4	132.7	139.0	168.8	88.2	44.1	169.7	112.4	27.8	136.4	131.5	51.8
LnGrp LOS	F	F	F	F	F	D	F	F	C	F	F	D
Approach Vol, veh/h		3060			2605			1205			2010	
Approach Delay, s/veh		131.9			93.4			106.0			117.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.2	90.8	41.0	55.0	32.0	92.0	23.0	73.0
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 27	* 83	* 33	* 47	* 25	* 85	* 15	* 65
Max Q Clear Time (g_c+I1), s	26.1	77.5	34.9	47.3	26.9	86.9	16.9	66.9
Green Ext Time (p_c), s	0.1	4.2	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	113.8
HCM 6th LOS	F

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)	295	2680	345	375	2150	125	225	205	415	175	315	100
Future Volume (veh/h)	295	2680	345	375	2150	125	225	205	415	175	315	100
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	295	2680	345	375	2150	125	225	205	415	175	315	100
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	360	2366	299	262	2202	128	220	151	306	141	312	99
Arrive On Green	0.41	0.83	0.83	0.05	0.12	0.12	0.11	0.28	0.28	0.06	0.23	0.23
Sat Flow, veh/h	1739	5688	719	1739	6117	355	1739	539	1091	1739	1328	422
Grp Volume(v), veh/h	295	2211	814	375	1655	620	225	0	620	175	0	415
Grp Sat Flow(s),veh/h/ln	1739	1570	1696	1739	1570	1762	1739	0	1630	1739	0	1750
Q Serve(g_s), s	33.1	91.5	91.5	33.2	77.1	77.1	23.7	0.0	61.7	13.7	0.0	51.7
Cycle Q Clear(g_c), s	33.1	91.5	91.5	33.2	77.1	77.1	23.7	0.0	61.7	13.7	0.0	51.7
Prop In Lane	1.00		0.42	1.00		0.20	1.00		0.67	1.00		0.24
Lane Grp Cap(c), veh/h	360	1960	706	262	1696	634	220	0	457	141	0	411
V/C Ratio(X)	0.82	1.13	1.15	1.43	0.98	0.98	1.02	0.00	1.36	1.24	0.00	1.01
Avail Cap(c_a), veh/h	360	1960	706	262	1696	634	220	0	457	141	0	411
HCM Platoon Ratio	2.00	2.00	2.00	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	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.8	18.5	18.5	104.5	96.0	96.0	74.9	0.0	79.2	68.0	0.0	84.2
Incr Delay (d2), s/veh	14.0	64.9	84.7	207.9	13.5	24.8	66.6	0.0	174.3	154.6	0.0	46.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	24.0	29.8	30.9	35.0	41.3	13.4	0.0	48.2	11.8	0.0	28.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.8	83.4	103.2	312.4	109.4	120.9	141.5	0.0	253.4	222.6	0.0	130.8
LnGrp LOS	E	F	F	F	F	F	F	A	F	F	A	F
Approach Vol, veh/h		3320			2650			845			590	
Approach Delay, s/veh		87.5			140.8			223.6			158.0	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	52.3	86.0	22.0	70.0	40.0	98.3	32.0	60.0
Change Period (Y+Rc), s	6.8	* 6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	36.0	* 79	13.7	61.7	33.2	81.2	23.7	51.7
Max Q Clear Time (g_c+I1), s	35.1	79.1	15.7	63.7	35.2	93.5	25.7	53.7
Green Ext Time (p_c), s	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	127.7
HCM 6th LOS	F

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)	920	1905	325	225	1530	1120	290	1020	265	900	1290	480
Future Volume (veh/h)	920	1905	325	225	1530	1120	290	1020	265	900	1290	480
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	920	1905	0	225	1530	0	290	1020	0	900	1290	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	561	2213		254	1758		205	915		543	984	
Arrive On Green	0.33	0.89	0.00	0.08	0.35	0.00	0.06	0.18	0.00	0.16	0.28	0.00
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	4985	1547	3374	3469	1547
Grp Volume(v), veh/h	920	1905	0	225	1530	0	290	1020	0	900	1290	0
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1662	1547	1687	1735	1547
Q Serve(g_s), s	36.6	40.0	0.0	14.5	63.1	0.0	13.4	40.4	0.0	35.4	62.4	0.0
Cycle Q Clear(g_c), s	36.6	40.0	0.0	14.5	63.1	0.0	13.4	40.4	0.0	35.4	62.4	0.0
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	561	2213		254	1758		205	915		543	984	
V/C Ratio(X)	1.64	0.86		0.89	0.87		1.41	1.11		1.66	1.31	
Avail Cap(c_a), veh/h	561	2213		255	1758		205	915		543	984	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.54	0.54	0.00	0.41	0.41	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	73.4	9.1	0.0	100.8	66.5	0.0	103.3	89.8	0.0	92.3	78.8	0.0
Incr Delay (d2), s/veh	292.0	2.6	0.0	14.1	2.7	0.0	211.4	66.3	0.0	304.2	147.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	36.9	4.8	0.0	6.9	26.9	0.0	11.9	22.9	0.0	38.4	47.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	365.4	11.7	0.0	114.9	69.2	0.0	314.7	156.1	0.0	396.5	226.1	0.0
LnGrp LOS	F	B		F	E		F	F		F	F	
Approach Vol, veh/h		2825			1755			1310			2190	
Approach Delay, s/veh		126.9			75.0			191.2			296.1	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.0	85.0	43.0	48.0	23.9	105.1	21.0	70.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	36.6	77.6	* 35	* 40	16.6	97.6	* 13	* 62
Max Q Clear Time (g_c+I1), s	38.6	65.1	37.4	42.4	16.5	42.0	15.4	64.4
Green Ext Time (p_c), s	0.0	6.4	0.0	0.0	0.0	15.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	171.9
HCM 6th LOS	F

Notes

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

Unsignalized Delay for [NBR, EBR, 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)	140	2175	760	665	2220	130	510	235	290	50	140	140
Future Volume (veh/h)	140	2175	760	665	2220	130	510	235	290	50	140	140
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	140	2175	0	665	2220	130	510	235	290	50	140	140
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	152	2066		680	2636	818	573	310	1011	122	128	108
Arrive On Green	0.09	0.41	0.00	0.27	0.70	0.70	0.17	0.17	0.17	0.07	0.07	0.07
Sat Flow, veh/h	1739	4985	1547	3374	4985	1547	3374	1826	2723	1739	1826	1547
Grp Volume(v), veh/h	140	2175	0	665	2220	130	510	235	290	50	140	140
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1687	1662	1547	1687	1826	1362	1739	1826	1547
Q Serve(g_s), s	17.6	91.2	0.0	43.0	71.3	6.2	32.5	27.0	0.0	6.1	15.4	15.4
Cycle Q Clear(g_c), s	17.6	91.2	0.0	43.0	71.3	6.2	32.5	27.0	0.0	6.1	15.4	15.4
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	152	2066		680	2636	818	573	310	1011	122	128	108
V/C Ratio(X)	0.92	1.05		0.98	0.84	0.16	0.89	0.76	0.29	0.41	1.10	1.29
Avail Cap(c_a), veh/h	152	2066		680	2636	818	682	369	1100	122	128	108
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.36	0.36	0.36	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	99.7	64.4	0.0	80.0	26.0	16.3	89.3	87.0	48.7	98.0	102.3	102.3
Incr Delay (d2), s/veh	8.7	25.1	0.0	15.8	1.3	0.1	12.3	7.3	0.2	2.2	107.5	184.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	42.4	0.0	19.4	24.1	2.2	15.1	13.4	5.8	2.9	11.3	11.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	108.4	89.5	0.0	95.8	27.2	16.4	101.6	94.3	48.8	100.2	209.8	286.4
LnGrp LOS	F	F		F	C	B	F	F	D	F	F	F
Approach Vol, veh/h		2315			3015			1035			330	
Approach Delay, s/veh		90.7			41.9			85.2			225.7	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	124.1		44.9	52.1	99.0		24.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 19	* 1.1E2		* 45	* 37	* 91		15.4				
Max Q Clear Time (g_c+I1), s	19.6	73.3		34.5	45.0	93.2		17.4				
Green Ext Time (p_c), s	0.0	18.3		2.8	0.0	0.0		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		74.5
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 [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)	190	2380	25	15	3210	375	5	5	5	180	5	250
Future Volume (veh/h)	190	2380	25	15	3210	375	5	5	5	180	5	250
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	190	2380	25	15	3210	375	5	5	5	180	5	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	210	3528	1095	69	3415	1060	22	21	10	121	2	222
Arrive On Green	0.06	0.71	0.71	0.08	1.00	1.00	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	3374	4985	1547	1739	4985	1547	0	146	73	621	17	1547
Grp Volume(v), veh/h	190	2380	25	15	3210	375	15	0	0	185	0	250
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1739	1662	1547	218	0	0	638	0	1547
Q Serve(g_s), s	12.3	58.8	1.1	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5
Cycle Q Clear(g_c), s	12.3	58.8	1.1	1.8	0.0	0.0	31.5	0.0	0.0	31.5	0.0	31.5
Prop In Lane	1.00		1.00	1.00		1.00	0.33		0.33	0.97		1.00
Lane Grp Cap(c), veh/h	210	3528	1095	69	3415	1060	53	0	0	124	0	222
V/C Ratio(X)	0.90	0.67	0.02	0.22	0.94	0.35	0.28	0.00	0.00	1.50	0.00	1.13
Avail Cap(c_a), veh/h	210	3528	1095	69	3415	1060	53	0	0	124	0	222
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.17	0.17	0.17	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	102.5	18.0	9.6	98.1	0.0	0.0	83.2	0.0	0.0	98.4	0.0	94.3
Incr Delay (d2), s/veh	37.0	1.1	0.0	0.3	1.3	0.2	2.9	0.0	0.0	260.9	0.0	99.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	21.7	0.4	0.8	0.4	0.0	0.8	0.0	0.0	16.2	0.0	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.5	19.0	9.6	98.4	1.3	0.2	86.0	0.0	0.0	359.3	0.0	193.6
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		2595			3600			15			435	
Approach Delay, s/veh		27.8			1.6			86.0			264.0	
Approach LOS		C			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.0	158.0		41.0	16.0	163.0		41.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 14	* 1.5E2		31.5	* 8.7	* 1.6E2		31.5				
Max Q Clear Time (g_c+I1), s	14.3	2.0		33.5	3.8	60.8		33.5				
Green Ext Time (p_c), s	0.0	85.8		0.0	0.0	27.3		0.0				

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)	85	2400	80	85	3230	210	130	185	50	270	130	235
Future Volume (veh/h)	85	2400	80	85	3230	210	130	185	50	270	130	235
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	85	2400	80	85	3230	210	130	185	50	270	130	235
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	70	2671	829	252	3192	991	188	300	81	274	396	335
Arrive On Green	0.08	1.00	1.00	0.29	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	993	1384	374	2169	1826	1547
Grp Volume(v), veh/h	85	2400	80	85	3230	210	130	0	235	270	130	235
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	993	0	1759	1085	1826	1547
Q Serve(g_s), s	8.9	0.0	0.0	8.5	140.9	0.0	28.0	0.0	26.6	21.1	13.2	30.9
Cycle Q Clear(g_c), s	8.9	0.0	0.0	8.5	140.9	0.0	41.2	0.0	26.6	47.7	13.2	30.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	70	2671	829	252	3192	991	188	0	381	274	396	335
V/C Ratio(X)	1.21	0.90	0.10	0.34	1.01	0.21	0.69	0.00	0.62	0.99	0.33	0.70
Avail Cap(c_a), veh/h	70	2671	829	252	3192	991	188	0	381	274	396	335
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)	0.71	0.71	0.71	0.09	0.09	0.09	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	101.1	0.0	0.0	69.8	0.0	0.0	90.0	0.0	77.9	101.9	72.6	79.6
Incr Delay (d2), s/veh	156.7	3.9	0.2	0.1	8.1	0.0	10.2	0.0	3.0	50.5	0.5	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	1.0	0.0	3.6	2.4	0.0	7.8	0.0	12.5	9.7	6.3	13.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	257.8	3.9	0.2	69.9	8.1	0.0	100.2	0.0	80.8	152.3	73.1	85.9
LnGrp LOS	F	A	A	E	F	A	F	A	F	F	E	F
Approach Vol, veh/h		2565			3525			365			635	
Approach Delay, s/veh		12.2			9.1			87.7			111.5	
Approach LOS		B			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.0	148.0		56.0	39.0	125.0		56.0				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	8.9	140.9		47.7	31.9	117.9		47.7				
Max Q Clear Time (g_c+I1), s	10.9	142.9		43.2	10.5	2.0		49.7				
Green Ext Time (p_c), s	0.0	0.0		0.6	0.2	29.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		23.5	
HCM 6th LOS		C	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	550	1865	310	355	2700	240	475	1055	305	320	765	350
Future Volume (veh/h)	550	1865	310	355	2700	240	475	1055	305	320	765	350
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	550	1865	310	355	2700	240	475	1055	305	320	765	350
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	426	2185	678	386	2125	660	523	787	528	244	960	493
Arrive On Green	0.25	0.88	0.88	0.11	0.43	0.43	0.11	0.23	0.23	0.07	0.19	0.19
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	4904	3469	1547	3374	4985	1547
Grp Volume(v), veh/h	550	1865	310	355	2700	240	475	1055	305	320	765	350
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1635	1735	1547	1687	1662	1547
Q Serve(g_s), s	27.8	40.3	9.1	22.9	93.8	23.2	21.1	49.9	35.6	15.9	32.2	42.3
Cycle Q Clear(g_c), s	27.8	40.3	9.1	22.9	93.8	23.2	21.1	49.9	35.6	15.9	32.2	42.3
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	426	2185	678	386	2125	660	523	787	528	244	960	493
V/C Ratio(X)	1.29	0.85	0.46	0.92	1.27	0.36	0.91	1.34	0.58	1.31	0.80	0.71
Avail Cap(c_a), veh/h	426	2185	678	411	2125	660	555	787	528	244	960	493
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.2	10.1	8.2	96.4	63.1	42.8	97.2	85.1	59.5	102.0	84.7	66.0
Incr Delay (d2), s/veh	136.2	1.5	0.7	24.9	125.5	1.6	18.3	161.9	1.6	166.8	4.8	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.9	4.8	2.3	11.3	63.3	9.3	9.8	39.9	14.3	12.7	14.3	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	218.4	11.6	8.9	121.3	188.6	44.4	115.6	246.9	61.0	268.8	89.5	70.6
LnGrp LOS	F	B	A	F	F	D	F	F	E	F	F	E
Approach Vol, veh/h		2725			3295			1835			1435	
Approach Delay, s/veh		53.0			170.9			182.0			124.9	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.0	102.0	24.0	58.0	33.4	104.6	31.6	50.4
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	27.8	93.8	* 16	* 50	26.8	94.8	* 25	* 41
Max Q Clear Time (g_c+I1), s	29.8	95.8	17.9	51.9	24.9	42.3	23.1	44.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.3	28.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	131.4
HCM 6th LOS	F

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 (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
Future Volume (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (prot)		3438	1538	1564	3251					1633	1673	1538
Flt Permitted		1.00	1.00	0.95	0.99					0.95	0.97	1.00
Satd. Flow (perm)		3438	1538	1564	3251					1633	1673	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1060	330	1100	1080	0	0	0	0	435	130	425
RTOR Reduction (vph)	0	0	95	0	0	0	0	0	0	0	0	267
Lane Group Flow (vph)	0	1060	235	715	1465	0	0	0	0	278	287	158
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		54.9	54.9	109.4	109.4					32.4	32.4	32.4
Effective Green, g (s)		54.9	54.9	109.4	109.4					32.4	32.4	32.4
Actuated g/C Ratio		0.25	0.25	0.50	0.50					0.15	0.15	0.15
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		857	383	777	1616					240	246	226
v/s Ratio Prot		c0.31		c0.46	0.45					0.17	c0.17	
v/s Ratio Perm			0.15									0.10
v/c Ratio		1.24	0.61	0.92	0.91					1.16	1.17	0.70
Uniform Delay, d1		82.5	73.2	51.3	50.6					93.8	93.8	89.2
Progression Factor		1.18	1.38	0.34	0.13					1.00	1.00	1.00
Incremental Delay, d2		112.2	1.6	2.0	0.8					107.6	109.9	9.1
Delay (s)		209.5	102.5	19.3	7.2					201.4	203.7	98.3
Level of Service		F	F	B	A					F	F	F
Approach Delay (s)		184.1			11.1			0.0			157.8	
Approach LOS		F			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	95.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
Future Volume (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3415			4940	1538	1633	1332	2799			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3415			4940	1538	1633	1332	2799			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	200	1295	0	0	1840	535	340	0	1760	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	177	0	271	34	0	0	0
Lane Group Flow (vph)	0	1495	0	0	1840	358	306	326	1163	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		95.4			67.5	67.5	35.4	35.4	109.4			
Effective Green, g (s)		95.4			67.5	67.5	35.4	35.4	109.4			
Actuated g/C Ratio		0.43			0.31	0.31	0.16	0.16	0.50			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1480			1515	471	262	214	1391			
v/s Ratio Prot		c0.44			c0.37		0.19	c0.24	0.42			
v/s Ratio Perm						0.23						
v/c Ratio		1.01			1.21	0.76	1.17	1.52	0.84			
Uniform Delay, d1		62.3			76.2	68.9	92.3	92.3	47.6			
Progression Factor		0.14			0.68	0.68	1.00	1.00	1.00			
Incremental Delay, d2		9.7			99.5	5.2	108.8	257.8	4.5			
Delay (s)		18.5			151.3	51.8	201.1	350.1	52.1			
Level of Service		B			F	D	F	F	D			
Approach Delay (s)		18.5			128.9			158.5			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	111.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	455	2405	410	105	50	2375	80	0	0	185	0	0
Future Volume (vph)	455	2405	410	105	50	2375	80	0	0	185	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0			6.0			6.0
Lane Util. Factor	1.00	0.86			1.00	0.86			1.00			1.00
Frt	1.00	0.98			1.00	1.00			0.85			0.86
Flt Protected	0.95	1.00			0.95	1.00			1.00			1.00
Satd. Flow (prot)	1719	6089			1719	6194			1538			1565
Flt Permitted	0.03	1.00			0.02	1.00			1.00			1.00
Satd. Flow (perm)	55	6089			45	6194			1538			1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	455	2405	410	105	50	2375	80	0	0	185	0	0
RTOR Reduction (vph)	0	9	0	0	0	2	0	0	83	0	0	255
Lane Group Flow (vph)	455	2806	0	0	155	2453	0	0	102	0	0	25
Turn Type	D.P+P	NA		D.P+P	D.P+P	NA		D.P+P	NA			NA
Protected Phases	1	6		5	5	2		7	4			8
Permitted Phases	2			6	6			8			8	
Actuated Green, G (s)	182.5	161.6			182.5	132.5			19.5			19.5
Effective Green, g (s)	182.5	161.6			182.5	132.5			19.5			19.5
Actuated g/C Ratio	0.83	0.73			0.83	0.60			0.09			0.09
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0			3.0
Lane Grp Cap (vph)	423	4472			196	3730			136			138
v/s Ratio Prot	c0.24	0.46			0.07	0.40			c0.07			0.02
v/s Ratio Perm	c0.65				0.58							
v/c Ratio	1.08	0.63			0.79	0.66			0.75			0.18
Uniform Delay, d1	77.0	14.4			74.7	28.8			97.9			92.8
Progression Factor	1.01	1.21			0.93	0.45			1.00			1.00
Incremental Delay, d2	38.8	0.1			13.7	0.6			20.5			0.6
Delay (s)	116.4	17.5			83.4	13.6			118.4			93.5
Level of Service	F	B			F	B			F			F
Approach Delay (s)		31.2				17.8			118.4			93.5
Approach LOS		C				B			F			F

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	280
Future Volume (vph)	280
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	280
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	340	50	2760	180	135	80	2145	50	165	230	180	80
Future Volume (vph)	340	50	2760	180	135	80	2145	50	165	230	180	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.9	6.9			6.9	6.9		8.0	8.0		8.0
Lane Util. Factor		1.00	0.86			1.00	0.86		1.00	0.95		1.00
Frt		1.00	0.99			1.00	1.00		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1719	6168			1719	6203		1719	3212		1719
Flt Permitted		0.04	1.00			0.03	1.00		0.46	1.00		0.33
Satd. Flow (perm)		69	6168			58	6203		838	3212		588
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	50	2760	180	135	80	2145	50	165	230	180	80
RTOR Reduction (vph)	0	0	4	0	0	0	1	0	0	62	0	0
Lane Group Flow (vph)	0	390	2936	0	0	215	2194	0	165	348	0	80
Turn Type	D.P+P	D.P+P	NA		D.P+P	D.P+P	NA		Perm	NA		Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases	2	2			6	6			4			8
Actuated Green, G (s)		154.3	124.1			154.3	104.9		43.9	43.9		43.9
Effective Green, g (s)		154.3	124.1			154.3	104.9		43.9	43.9		43.9
Actuated g/C Ratio		0.70	0.56			0.70	0.48		0.20	0.20		0.20
Clearance Time (s)		6.9	6.9			6.9	6.9		8.0	8.0		8.0
Vehicle Extension (s)		2.0	3.0			2.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		418	3479			268	2957		167	640		117
v/s Ratio Prot		c0.21	0.48			0.11	0.35			0.11		
v/s Ratio Perm		c0.44				0.45			c0.20			0.14
v/c Ratio		0.93	0.84			0.80	0.74		0.99	0.54		0.68
Uniform Delay, d1		74.0	39.9			70.8	46.6		87.8	79.1		81.6
Progression Factor		1.26	0.50			0.75	0.69		1.00	1.00		1.00
Incremental Delay, d2		25.4	2.4			11.1	1.2		65.5	0.9		15.3
Delay (s)		118.5	22.5			64.2	33.2		153.3	80.0		96.9
Level of Service		F	C			E	C		F	F		F
Approach Delay (s)			33.7				36.0			101.0		
Approach LOS			C				D			F		

Intersection Summary			
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	21.8
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	175	10
Future Volume (vph)	175	10
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	8.0	
Lane Util. Factor	1.00	
Frt	0.99	
Flt Protected	1.00	
Satd. Flow (prot)	1795	
Flt Permitted	1.00	
Satd. Flow (perm)	1795	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	175	10
RTOR Reduction (vph)	1	0
Lane Group Flow (vph)	184	0
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	43.9	
Effective Green, g (s)	43.9	
Actuated g/C Ratio	0.20	
Clearance Time (s)	8.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	358	
v/s Ratio Prot	0.10	
v/s Ratio Perm		
v/c Ratio	0.51	
Uniform Delay, d1	78.5	
Progression Factor	1.00	
Incremental Delay, d2	1.3	
Delay (s)	79.8	
Level of Service	E	
Approach Delay (s)	85.0	
Approach LOS	F	

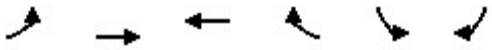
Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	340	235	2865	0	0	2080	215	0	0	0	285	0
Future Volume (vph)	340	235	2865	0	0	2080	215	0	0	0	285	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8			6.8					8.4	8.4
Lane Util. Factor		1.00	0.91			0.86					1.00	1.00
Frt		1.00	1.00			0.99					1.00	0.85
Flt Protected		0.95	1.00			1.00					0.95	1.00
Satd. Flow (prot)		1719	4940			6137					1719	1538
Flt Permitted		0.04	1.00			1.00					0.95	1.00
Satd. Flow (perm)		69	4940			6137					1719	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	235	2865	0	0	2080	215	0	0	0	285	0
RTOR Reduction (vph)	0	0	0	0	0	6	0	0	0	0	0	64
Lane Group Flow (vph)	0	575	2865	0	0	2289	0	0	0	0	285	11
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	NA		Split			Split	NA
Protected Phases	1	1	6		5	2		4	4		8	8
Permitted Phases	2	2		6	6							
Actuated Green, G (s)		164.4	171.2			130.2					33.6	33.6
Effective Green, g (s)		164.4	171.2			130.2					33.6	33.6
Actuated g/C Ratio		0.75	0.78			0.59					0.15	0.15
Clearance Time (s)		6.8	6.8			6.8					8.4	8.4
Vehicle Extension (s)		2.0	3.0			3.0					3.0	3.0
Lane Grp Cap (vph)		308	3844			3631					262	234
v/s Ratio Prot		c0.29	0.58			0.37					c0.17	0.01
v/s Ratio Perm		c1.10										
v/c Ratio		1.87	0.75			0.63					1.09	0.05
Uniform Delay, d1		77.6	12.9			29.2					93.2	79.6
Progression Factor		1.39	0.24			0.56					1.00	1.00
Incremental Delay, d2		398.3	0.9			0.3					81.0	0.1
Delay (s)		506.6	4.1			16.8					174.2	79.6
Level of Service		F	A			B					F	E
Approach Delay (s)			88.1			16.8			0.0			154.5
Approach LOS			F			B			A			F

Intersection Summary			
HCM 2000 Control Delay	65.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.81		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	30.4
Intersection Capacity Utilization	99.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

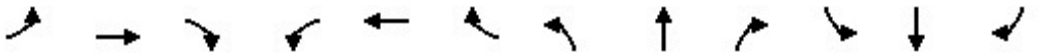
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	75
Future Volume (vph)	75
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	75
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	280	2235	2660	770	410	355
Future Volume (vph)	280	2235	2660	770	410	355
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	4940	4940	1538	3335	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	4940	4940	1538	3335	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	280	2235	2660	770	410	355
RTOR Reduction (vph)	0	0	0	106	0	1
Lane Group Flow (vph)	280	2235	2660	664	410	354
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	28.1	168.1	132.1	132.1	34.0	72.1
Effective Green, g (s)	28.1	168.1	132.1	132.1	34.0	72.1
Actuated g/C Ratio	0.13	0.76	0.60	0.60	0.15	0.33
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	425	3774	2966	923	515	504
v/s Ratio Prot	0.08	0.45	c0.54		0.12	c0.23
v/s Ratio Perm				0.43		
v/c Ratio	0.66	0.59	0.90	0.72	0.80	0.70
Uniform Delay, d1	91.4	11.2	38.1	30.9	89.7	64.6
Progression Factor	1.42	0.12	0.65	0.56	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.9	1.9	8.3	4.4
Delay (s)	131.1	1.4	26.7	19.2	98.0	69.0
Level of Service	F	A	C	B	F	E
Approach Delay (s)		15.9	25.0		84.5	
Approach LOS		B	C		F	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



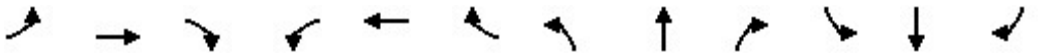
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	255	10	505	295	570	35	1055	725	460	815	30
Future Volume (veh/h)	20	255	10	505	295	570	35	1055	725	460	815	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	20	255	10	505	295	570	35	1055	725	460	815	30
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	28	403	16	549	485	411	116	1405	627	608	1770	65
Arrive On Green	0.02	0.12	0.12	0.27	0.44	0.44	0.07	0.41	0.41	0.18	0.52	0.52
Sat Flow, veh/h	1739	3404	133	3374	1826	1547	1739	3469	1547	3374	3412	126
Grp Volume(v), veh/h	20	130	135	505	295	570	35	1055	725	460	414	431
Grp Sat Flow(s),veh/h/ln	1739	1735	1802	1687	1826	1547	1739	1735	1547	1687	1735	1803
Q Serve(g_s), s	2.5	15.7	15.8	32.0	27.1	58.4	4.2	57.2	54.8	28.5	33.2	33.2
Cycle Q Clear(g_c), s	2.5	15.7	15.8	32.0	27.1	58.4	4.2	57.2	54.8	28.5	33.2	33.2
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	28	205	213	549	485	411	116	1405	627	608	900	935
V/C Ratio(X)	0.72	0.63	0.64	0.92	0.61	1.39	0.30	0.75	1.16	0.76	0.46	0.46
Avail Cap(c_a), veh/h	66	205	213	649	485	411	116	1405	627	608	900	935
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	107.7	92.4	92.5	78.7	52.5	61.2	97.8	56.0	24.8	85.6	33.5	33.5
Incr Delay (d2), s/veh	12.0	6.1	6.1	2.2	0.2	175.9	0.5	3.7	87.7	5.4	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	7.5	7.8	13.3	11.5	41.6	1.9	25.6	35.8	12.8	14.5	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.8	98.5	98.5	80.9	52.8	237.1	98.3	59.7	112.4	91.0	35.2	35.1
LnGrp LOS	F	F	F	F	D	F	F	E	F	F	D	D
Approach Vol, veh/h		285			1370			1815			1305	
Approach Delay, s/veh		100.0			139.8			81.5			54.8	
Approach LOS		F			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	121.0	11.2	66.0	46.8	96.0	43.5	33.7
Change Period (Y+Rc), s	7.1	* 6.9	* 7.7	* 7.6	7.1	* 6.9	* 7.7	* 7.7
Max Green Setting (Gmax), s	9.9	* 1.1E2	* 8.3	* 58	34.9	* 89	* 42	* 24
Max Q Clear Time (g_c+I1), s	6.2	35.2	4.5	60.4	30.5	59.2	34.0	17.8
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.7	8.3	1.8	0.6

Intersection Summary	
HCM 6th Ctrl Delay	92.1
HCM 6th LOS	F

Notes

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



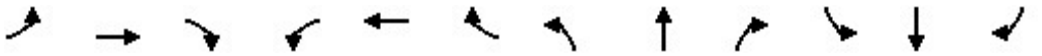
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	305	1905	140	370	2405	425	220	885	325	505	885	505
Future Volume (veh/h)	305	1905	140	370	2405	425	220	885	325	505	885	505
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	305	1905	140	370	2405	425	220	885	325	505	885	505
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	259	2622	193	228	2128	857	244	803	463	428	992	561
Arrive On Green	0.15	0.87	0.87	0.09	0.57	0.57	0.07	0.23	0.23	0.13	0.29	0.29
Sat Flow, veh/h	3374	6015	442	3374	4985	1547	3374	3469	1547	3374	3469	1547
Grp Volume(v), veh/h	305	1492	553	370	2405	425	220	885	325	505	885	505
Grp Sat Flow(s),veh/h/ln	1687	1570	1746	1687	1662	1547	1687	1735	1547	1687	1735	1547
Q Serve(g_s), s	16.9	24.4	24.4	14.9	93.9	32.1	14.2	50.9	22.1	27.9	53.8	62.9
Cycle Q Clear(g_c), s	16.9	24.4	24.4	14.9	93.9	32.1	14.2	50.9	22.1	27.9	53.8	62.9
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	2053	761	228	2128	857	244	803	463	428	992	561
V/C Ratio(X)	1.18	0.73	0.73	1.62	1.13	0.50	0.90	1.10	0.70	1.18	0.89	0.90
Avail Cap(c_a), veh/h	259	2053	761	228	2128	857	244	803	463	428	992	561
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.37	0.37	0.37	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	93.1	9.5	9.5	100.1	47.6	21.9	101.3	84.6	44.0	96.0	75.3	66.3
Incr Delay (d2), s/veh	94.1	0.9	2.3	298.0	65.3	2.1	32.3	63.7	4.0	102.9	10.0	17.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.3	4.0	4.7	15.8	48.4	11.1	7.3	29.8	8.5	18.3	25.2	29.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	187.2	10.4	11.8	398.1	112.8	24.0	133.5	148.2	48.0	198.9	85.3	83.4
LnGrp LOS	F	B	B	F	F	C	F	F	D	F	F	F
Approach Vol, veh/h		2350			3200			1430			1895	
Approach Delay, s/veh		33.7			134.0			123.2			115.1	
Approach LOS		C			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	101.0	36.0	59.0	22.0	103.0	24.0	71.0
Change Period (Y+Rc), s	* 7.1	* 7.1	* 8.1	* 8.1	* 7.1	* 7.1	* 8.1	* 8.1
Max Green Setting (Gmax), s	* 17	* 94	* 28	* 51	* 15	* 96	* 16	* 63
Max Q Clear Time (g_c+I1), s	18.9	95.9	29.9	52.9	16.9	26.4	16.2	64.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	16.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	101.6
HCM 6th LOS	F

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)	315	2010	415	240	2915	185	155	265	270	130	210	110
Future Volume (veh/h)	315	2010	415	240	2915	185	155	265	270	130	210	110
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	315	2010	415	240	2915	185	155	265	270	130	210	110
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	168	2446	502	183	2882	181	205	187	191	148	241	126
Arrive On Green	0.19	0.93	0.93	0.07	0.32	0.32	0.08	0.23	0.23	0.07	0.21	0.21
Sat Flow, veh/h	1739	5262	1080	1739	6086	382	1739	829	845	1739	1128	591
Grp Volume(v), veh/h	315	1798	627	240	2250	850	155	0	535	130	0	320
Grp Sat Flow(s),veh/h/ln	1739	1570	1631	1739	1570	1757	1739	0	1674	1739	0	1720
Q Serve(g_s), s	21.3	25.0	25.7	23.2	104.2	104.2	15.2	0.0	49.7	12.6	0.0	39.5
Cycle Q Clear(g_c), s	21.3	25.0	25.7	23.2	104.2	104.2	15.2	0.0	49.7	12.6	0.0	39.5
Prop In Lane	1.00		0.66	1.00		0.22	1.00		0.50	1.00		0.34
Lane Grp Cap(c), veh/h	168	2190	758	183	2231	832	205	0	378	148	0	368
V/C Ratio(X)	1.87	0.82	0.83	1.31	1.01	1.02	0.76	0.00	1.41	0.88	0.00	0.87
Avail Cap(c_a), veh/h	168	2190	758	183	2231	832	224	0	378	188	0	388
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.38	0.38	0.38	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	88.7	5.0	5.0	102.2	75.1	75.1	64.6	0.0	85.2	65.1	0.0	83.5
Incr Delay (d2), s/veh	415.3	3.6	10.0	153.3	13.8	25.0	10.8	0.0	201.7	25.3	0.0	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(50%),veh/ln	28.2	3.1	4.6	18.5	45.7	53.7	7.5	0.0	42.9	6.7	0.0	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	504.0	8.6	15.1	255.5	88.9	100.0	75.5	0.0	286.8	90.4	0.0	101.6
LnGrp LOS	F	A	B	F	F	F	E	A	F	F	A	F
Approach Vol, veh/h		2740			3340			690			450	
Approach Delay, s/veh		67.1			103.7			239.4			98.4	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.1	111.0	22.9	58.0	30.0	109.1	25.6	55.4
Change Period (Y+Rc), s	6.8	6.8	8.3	8.3	6.8	6.8	8.3	8.3
Max Green Setting (Gmax), s	16.2	104.2	19.7	49.7	23.2	97.2	19.7	49.7
Max Q Clear Time (g_c+I1), s	23.3	106.2	14.6	51.7	25.2	27.7	17.2	41.5
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	23.7	0.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	102.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	595	1470	280	210	1895	965	440	1060	310	1125	1090	840
Future Volume (veh/h)	595	1470	280	210	1895	965	440	1060	310	1125	1090	840
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	595	1470	0	210	1895	0	440	1060	0	1125	1090	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	423	1871		239	1600		313	938		773	1126	
Arrive On Green	0.25	0.75	0.00	0.07	0.32	0.00	0.09	0.19	0.00	0.23	0.32	0.00
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	3374	4985	1547	3374	3469	1547
Grp Volume(v), veh/h	595	1470	0	210	1895	0	440	1060	0	1125	1090	0
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1687	1662	1547	1687	1735	1547
Q Serve(g_s), s	27.6	39.4	0.0	13.6	70.6	0.0	20.4	41.4	0.0	50.4	68.1	0.0
Cycle Q Clear(g_c), s	27.6	39.4	0.0	13.6	70.6	0.0	20.4	41.4	0.0	50.4	68.1	0.0
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	423	1871		239	1600		313	938		773	1126	
V/C Ratio(X)	1.41	0.79		0.88	1.18		1.41	1.13		1.46	0.97	
Avail Cap(c_a), veh/h	423	1871		255	1600		313	938		773	1126	
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.00	0.09	0.09	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	82.4	22.0	0.0	101.2	74.7	0.0	99.8	89.3	0.0	84.8	73.2	0.0
Incr Delay (d2), s/veh	192.8	2.5	0.0	3.1	83.7	0.0	201.1	72.1	0.0	212.2	19.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	10.1	0.0	6.1	42.2	0.0	17.7	24.0	0.0	44.6	33.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	275.2	24.5	0.0	104.4	158.4	0.0	300.9	161.4	0.0	297.0	92.7	0.0
LnGrp LOS	F	C		F	F		F	F		F	F	
Approach Vol, veh/h		2065			2105			1500			2215	
Approach Delay, s/veh		96.8			153.0			202.3			196.5	
Approach LOS		F			F			F			F	

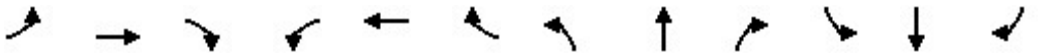
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	78.0	58.0	49.0	23.0	90.0	28.0	79.0
Change Period (Y+Rc), s	7.4	7.4	* 7.6	* 7.6	7.4	7.4	* 7.6	* 7.6
Max Green Setting (Gmax), s	27.6	70.6	* 50	* 41	16.6	81.6	* 20	* 71
Max Q Clear Time (g_c+I1), s	29.6	72.6	52.4	43.4	15.6	41.4	22.4	70.1
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	159.9
HCM 6th LOS	F

Notes

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

Unsignalized Delay for [NBR, EBR, 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)	225	2085	595	220	2220	20	680	125	785	105	230	170
Future Volume (veh/h)	225	2085	595	220	2220	20	680	125	785	105	230	170
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	225	2085	0	220	2220	20	680	125	785	105	230	170
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	207	2225		356	2157	670	590	320	764	224	236	200
Arrive On Green	0.12	0.45	0.00	0.14	0.58	0.58	0.17	0.17	0.17	0.13	0.13	0.13
Sat Flow, veh/h	1739	4985	1547	3374	4985	1547	3374	1826	2723	1739	1826	1547
Grp Volume(v), veh/h	225	2085	0	220	2220	20	680	125	785	105	230	170
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1687	1662	1547	1687	1826	1362	1739	1826	1547
Q Serve(g_s), s	26.2	87.6	0.0	13.5	95.2	1.2	38.5	13.3	38.5	12.3	27.6	23.6
Cycle Q Clear(g_c), s	26.2	87.6	0.0	13.5	95.2	1.2	38.5	13.3	38.5	12.3	27.6	23.6
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	207	2225		356	2157	670	590	320	764	224	236	200
V/C Ratio(X)	1.09	0.94		0.62	1.03	0.03	1.15	0.39	1.03	0.47	0.98	0.85
Avail Cap(c_a), veh/h	207	2225		356	2157	670	590	320	764	224	236	200
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.00	0.40	0.40	0.40	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	96.9	58.0	0.0	90.4	46.7	26.7	90.8	80.4	79.2	88.8	95.5	93.7
Incr Delay (d2), s/veh	47.0	1.0	0.0	1.3	20.6	0.0	86.6	0.8	39.9	1.5	51.6	27.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	36.1	0.0	5.8	39.5	0.5	23.9	6.4	17.4	5.7	16.7	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	143.9	59.0	0.0	91.7	67.3	26.8	177.3	81.2	119.0	90.3	147.1	121.6
LnGrp LOS	F	E		F	F	C	F	F	F	F	F	F
Approach Vol, veh/h		2310			2460			1590			505	
Approach Delay, s/veh		67.3			69.2			141.0			126.7	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.0	103.0		46.0	31.0	106.0		37.0				
Change Period (Y+Rc), s	* 7.8	* 7.8		* 7.5	* 7.8	* 7.8		8.6				
Max Green Setting (Gmax), s	* 26	* 95		* 39	* 23	* 98		28.4				
Max Q Clear Time (g_c+I1), s	28.2	97.2		40.5	15.5	89.6		29.6				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.4	6.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		89.4
HCM 6th LOS		F

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)	195	3215	15	10	2340	250	10	5	10	295	5	250
Future Volume (veh/h)	195	3215	15	10	2340	250	10	5	10	295	5	250
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	195	3215	15	10	2340	250	10	5	10	295	5	250
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	302	3311	1028	18	2916	905	23	14	9	189	3	334
Arrive On Green	0.18	1.00	1.00	0.02	1.00	1.00	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	3374	4985	1547	1739	4985	1547	0	65	43	726	12	1547
Grp Volume(v), veh/h	195	3215	15	10	2340	250	25	0	0	300	0	250
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1739	1662	1547	108	0	0	739	0	1547
Q Serve(g_s), s	11.8	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.2
Cycle Q Clear(g_c), s	11.8	0.0	0.0	1.3	0.0	0.0	47.5	0.0	0.0	47.5	0.0	33.2
Prop In Lane	1.00		1.00	1.00		1.00	0.40		0.40	0.98		1.00
Lane Grp Cap(c), veh/h	302	3311	1028	18	2916	905	46	0	0	192	0	334
V/C Ratio(X)	0.65	0.97	0.01	0.55	0.80	0.28	0.54	0.00	0.00	1.56	0.00	0.75
Avail Cap(c_a), veh/h	302	3311	1028	69	2916	905	46	0	0	192	0	334
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)	1.00	1.00	1.00	0.61	0.61	0.61	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	87.1	0.0	0.0	107.2	0.0	0.0	73.1	0.0	0.0	90.3	0.0	80.7
Incr Delay (d2), s/veh	4.7	10.2	0.0	15.1	1.5	0.5	12.3	0.0	0.0	277.2	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	3.1	0.0	0.6	0.4	0.1	1.3	0.0	0.0	26.0	0.0	14.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	10.2	0.0	122.3	1.5	0.5	85.4	0.0	0.0	367.5	0.0	89.6
LnGrp LOS	F	B	A	F	A	A	F	A	A	F	A	F
Approach Vol, veh/h		3425			2600			25			550	
Approach Delay, s/veh		14.8			1.9			85.4			241.2	
Approach LOS		B			A			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	136.0		57.0	9.6	153.4		57.0				
Change Period (Y+Rc), s	* 7.3	* 7.3		9.5	* 7.3	* 7.3		9.5				
Max Green Setting (Gmax), s	* 20	* 1.3E2		47.5	* 8.7	* 1.4E2		47.5				
Max Q Clear Time (g_c+I1), s	13.8	2.0		49.5	3.3	2.0		49.5				
Green Ext Time (p_c), s	0.3	30.8		0.0	0.0	72.7		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		28.9	
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)	150	3270	100	85	2275	240	130	115	95	305	125	195
Future Volume (veh/h)	150	3270	100	85	2275	240	130	115	95	305	125	195
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	150	3270	100	85	2275	240	130	115	95	305	125	195
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	235	2986	927	70	2513	780	244	239	197	405	472	400
Arrive On Green	0.27	1.00	1.00	0.05	0.67	0.67	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1739	4985	1547	1739	4985	1547	1034	925	764	2219	1826	1547
Grp Volume(v), veh/h	150	3270	100	85	2275	240	130	0	210	305	125	195
Grp Sat Flow(s),veh/h/ln	1739	1662	1547	1739	1662	1547	1034	0	1688	1110	1826	1547
Q Serve(g_s), s	16.7	131.8	0.0	8.9	84.2	14.2	25.2	0.0	23.2	29.7	12.0	23.5
Cycle Q Clear(g_c), s	16.7	131.8	0.0	8.9	84.2	14.2	37.2	0.0	23.2	52.9	12.0	23.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	235	2986	927	70	2513	780	244	0	436	405	472	400
V/C Ratio(X)	0.64	1.10	0.11	1.21	0.91	0.31	0.53	0.00	0.48	0.75	0.27	0.49
Avail Cap(c_a), veh/h	235	2986	927	70	2513	780	285	0	504	494	545	462
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.19	0.19	0.19	0.28	0.28	0.28	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.5	0.0	0.0	104.1	31.9	20.3	79.8	0.0	69.1	91.5	65.0	69.2
Incr Delay (d2), s/veh	1.1	44.1	0.0	124.9	1.8	0.3	1.8	0.0	0.8	5.2	0.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	12.2	0.0	6.4	29.6	4.8	6.9	0.0	10.3	8.9	5.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.5	44.1	0.0	229.0	33.7	20.6	81.6	0.0	69.9	96.7	65.3	70.2
LnGrp LOS	E	F	A	F	C	C	F	A	E	F	E	E
Approach Vol, veh/h		3520			2600			340			625	
Approach Delay, s/veh		44.2			38.9			74.4			82.1	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	36.9	118.0		65.1	16.0	138.9		65.1				
Change Period (Y+Rc), s	7.1	7.1		8.3	7.1	7.1		8.3				
Max Green Setting (Gmax), s	20.9	110.9		65.7	8.9	122.9		65.7				
Max Q Clear Time (g_c+I1), s	18.7	86.2		39.2	10.9	133.8		54.9				
Green Ext Time (p_c), s	0.1	15.9		1.2	0.0	0.0		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			47.1									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	605	2605	455	325	1885	175	360	1095	325	410	620	355
Future Volume (veh/h)	605	2605	455	325	1885	175	360	1095	325	410	620	355
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	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826	1826
Adj Flow Rate, veh/h	605	2605	455	325	1885	175	360	1095	325	410	620	355
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	580	2171	674	319	1785	554	858	787	497	320	732	493
Arrive On Green	0.34	0.87	0.87	0.09	0.36	0.36	0.17	0.23	0.23	0.09	0.15	0.15
Sat Flow, veh/h	3374	4985	1547	3374	4985	1547	4904	3469	1547	3374	4985	1547
Grp Volume(v), veh/h	605	2605	455	325	1885	175	360	1095	325	410	620	355
Grp Sat Flow(s),veh/h/ln	1687	1662	1547	1687	1662	1547	1635	1735	1547	1687	1662	1547
Q Serve(g_s), s	37.8	95.8	20.3	20.8	78.8	18.0	14.4	49.9	14.6	20.9	26.7	25.9
Cycle Q Clear(g_c), s	37.8	95.8	20.3	20.8	78.8	18.0	14.4	49.9	14.6	20.9	26.7	25.9
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	580	2171	674	319	1785	554	858	787	497	320	732	493
V/C Ratio(X)	1.04	1.20	0.68	1.02	1.06	0.32	0.42	1.39	0.65	1.28	0.85	0.72
Avail Cap(c_a), veh/h	580	2171	674	319	1785	554	858	787	497	320	1221	645
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.2	14.2	9.3	99.6	70.6	51.1	80.8	85.1	37.8	99.5	91.4	28.7
Incr Delay (d2), s/veh	24.9	90.5	0.5	55.3	37.8	1.5	0.3	184.0	3.1	147.6	3.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.4	23.8	3.6	11.5	39.1	7.3	6.1	42.3	5.3	15.8	11.7	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.1	104.7	9.8	154.9	108.4	52.6	81.1	269.0	40.9	247.1	94.4	31.4
LnGrp LOS	F	F	A	F	F	D	F	F	D	F	F	C
Approach Vol, veh/h		3665			2385			1780			1385	
Approach Delay, s/veh		91.7			110.6			189.4			123.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.0	87.0	29.0	58.0	29.0	104.0	46.6	40.4
Change Period (Y+Rc), s	8.2	8.2	* 8.1	* 8.1	8.2	8.2	* 8.1	* 8.1
Max Green Setting (Gmax), s	37.8	78.8	* 21	* 50	20.8	95.8	* 17	* 54
Max Q Clear Time (g_c+I1), s	39.8	80.8	22.9	51.9	22.8	97.8	16.4	28.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	120.2
HCM 6th LOS	F

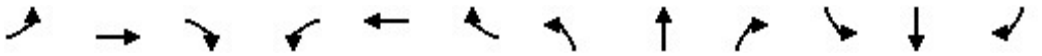
Notes

* 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 (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
Future Volume (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1	8.1	6.5	6.5					8.6	8.6	8.6
Lane Util. Factor		0.95	1.00	0.91	0.91					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (prot)		3438	1538	1564	3234					1633	1664	1538
Flt Permitted		1.00	1.00	0.95	0.98					0.95	0.97	1.00
Satd. Flow (perm)		3438	1538	1564	3234					1633	1664	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	960	475	1590	1170	0	0	0	0	475	95	200
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	0	0	0	126
Lane Group Flow (vph)	0	960	379	906	1854	0	0	0	0	285	285	74
Turn Type		NA	Perm	Split	NA					Split	NA	Perm
Protected Phases		6		2 4	2 4					8	8	
Permitted Phases			6									8
Actuated Green, G (s)		46.9	46.9	117.4	117.4					32.4	32.4	32.4
Effective Green, g (s)		46.9	46.9	117.4	117.4					32.4	32.4	32.4
Actuated g/C Ratio		0.21	0.21	0.53	0.53					0.15	0.15	0.15
Clearance Time (s)		8.1	8.1							8.6	8.6	8.6
Vehicle Extension (s)		3.0	3.0							3.0	3.0	3.0
Lane Grp Cap (vph)		732	327	834	1725					240	245	226
v/s Ratio Prot		c0.28		c0.58	0.57					c0.17	0.17	
v/s Ratio Perm			0.25									0.05
v/c Ratio		1.31	1.16	1.09	1.07					1.19	1.16	0.33
Uniform Delay, d1		86.5	86.5	51.3	51.3					93.8	93.8	84.0
Progression Factor		1.09	1.15	0.39	0.14					1.00	1.00	1.00
Incremental Delay, d2		145.4	88.5	41.2	35.0					118.3	108.8	0.8
Delay (s)		240.1	188.1	61.1	42.4					212.1	202.6	84.9
Level of Service		F	F	E	D					F	F	F
Approach Delay (s)		222.9			48.5			0.0			175.5	
Approach LOS		F			D			A			F	

Intersection Summary			
HCM 2000 Control Delay	118.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	116.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
Future Volume (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.1			6.5	6.5	6.6	6.6	6.5			
Lane Util. Factor		0.95			0.91	1.00	0.95	0.86	0.91			
Frt		1.00			1.00	0.85	1.00	0.86	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3396			4940	1538	1633	1334	2799			
Flt Permitted		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3396			4940	1538	1633	1334	2799			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	355	1075	0	0	2470	660	295	0	1270	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	163	0	221	32	0	0	0
Lane Group Flow (vph)	0	1430	0	0	2470	498	265	215	832	0	0	0
Turn Type	Split	NA			NA	Perm	Split	NA	custom			
Protected Phases	6 3	6 3			2		4	4	2 4			
Permitted Phases						2						
Actuated Green, G (s)		87.4			82.5	82.5	28.4	28.4	117.4			
Effective Green, g (s)		87.4			82.5	82.5	28.4	28.4	117.4			
Actuated g/C Ratio		0.40			0.38	0.38	0.13	0.13	0.53			
Clearance Time (s)					6.5	6.5	6.6	6.6				
Vehicle Extension (s)					3.0	3.0	3.0	3.0				
Lane Grp Cap (vph)		1349			1852	576	210	172	1493			
v/s Ratio Prot		c0.42			c0.50		c0.16	0.16	0.30			
v/s Ratio Perm						0.32						
v/c Ratio		1.06			1.33	0.86	1.26	1.25	0.56			
Uniform Delay, d1		66.3			68.8	63.6	95.8	95.8	34.1			
Progression Factor		0.29			0.63	0.39	1.00	1.00	1.00			
Incremental Delay, d2		29.0			150.5	1.7	150.3	150.9	0.5			
Delay (s)		48.1			193.7	26.4	246.1	246.7	34.5			
Level of Service		D			F	C	F	F	C			
Approach Delay (s)		48.1			158.4			129.4			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	125.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	29.8
Intersection Capacity Utilization	121.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	375	1870	165	70	35	2830	80	0	0	360	0	0
Future Volume (vph)	375	1870	165	70	35	2830	80	0	0	360	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0			6.0			6.0
Lane Util. Factor	1.00	0.86			1.00	0.86			1.00			1.00
Frt	1.00	0.99			1.00	1.00			0.85			0.86
Flt Protected	0.95	1.00			0.95	1.00			1.00			1.00
Satd. Flow (prot)	1719	6149			1719	6199			1538			1565
Flt Permitted	0.03	1.00			0.07	1.00			1.00			1.00
Satd. Flow (perm)	61	6149			120	6199			1538			1565
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	375	1870	165	70	35	2830	80	0	0	360	0	0
RTOR Reduction (vph)	0	5	0	0	0	2	0	0	110	0	0	248
Lane Group Flow (vph)	375	2030	0	0	105	2908	0	0	250	0	0	262
Turn Type	D.P+P	NA		D.P+P	D.P+P	NA		D.P+P	NA			NA
Protected Phases	1	6		5	5	2		7	4			8
Permitted Phases	2			6	6			8			8	
Actuated Green, G (s)	164.2	152.9			164.2	119.4			37.8			37.8
Effective Green, g (s)	164.2	152.9			164.2	119.4			37.8			37.8
Actuated g/C Ratio	0.75	0.70			0.75	0.54			0.17			0.17
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0			6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0			3.0
Lane Grp Cap (vph)	383	4273			171	3364			264			268
v/s Ratio Prot	c0.20	0.33			0.03	0.47			0.16			c0.17
v/s Ratio Perm	c0.53				0.43							
v/c Ratio	0.98	0.48			0.61	0.86			0.95			0.98
Uniform Delay, d1	78.7	15.3			13.5	43.3			90.1			90.7
Progression Factor	0.70	2.19			2.12	0.45			1.00			1.00
Incremental Delay, d2	23.1	0.1			4.5	2.3			40.6			48.6
Delay (s)	77.8	33.6			33.0	21.6			130.7			139.3
Level of Service	E	C			C	C			F			F
Approach Delay (s)		40.5				22.0			130.7			139.3
Approach LOS		D				C			F			F

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	510
Future Volume (vph)	510
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	510
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	105	60	1990	215	190	160	2775	35	120	155	160	95
Future Volume (vph)	105	60	1990	215	190	160	2775	35	120	155	160	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.9	6.9			6.9	6.9		8.0	8.0		8.0
Lane Util. Factor		1.00	0.86			1.00	0.86		1.00	0.95		1.00
Frt		1.00	0.99			1.00	1.00		1.00	0.92		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1719	6134			1719	6213		1719	3176		1719
Flt Permitted		0.03	1.00			0.04	1.00		0.32	1.00		0.42
Satd. Flow (perm)		53	6134			79	6213		582	3176		766
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	105	60	1990	215	190	160	2775	35	120	155	160	95
RTOR Reduction (vph)	0	0	7	0	0	0	1	0	0	39	0	0
Lane Group Flow (vph)	0	165	2198	0	0	350	2809	0	120	276	0	95
Turn Type	D.P+P	D.P+P	NA		D.P+P	D.P+P	NA		Perm	NA		Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases	2	2			6	6			4			8
Actuated Green, G (s)		156.9	128.8			156.9	137.0		41.3	41.3		41.3
Effective Green, g (s)		156.9	128.8			156.9	137.0		41.3	41.3		41.3
Actuated g/C Ratio		0.71	0.59			0.71	0.62		0.19	0.19		0.19
Clearance Time (s)		6.9	6.9			6.9	6.9		8.0	8.0		8.0
Vehicle Extension (s)		2.0	3.0			2.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		188	3591			265	3869		109	596		143
v/s Ratio Prot		0.08	0.36			c0.17	0.45			0.09		
v/s Ratio Perm		0.55				c0.77			c0.21			0.12
v/c Ratio		0.88	0.61			1.32	0.73		1.10	0.46		0.66
Uniform Delay, d1		76.8	29.5			56.5	28.6		89.3	79.5		82.9
Progression Factor		1.26	1.05			0.94	0.77		1.00	1.00		1.00
Incremental Delay, d2		30.0	0.7			161.6	0.8		116.0	0.6		11.1
Delay (s)		126.8	31.6			214.8	22.9		205.3	80.1		94.0
Level of Service		F	C			F	C		F	F		F
Approach Delay (s)			38.2				44.2			114.6		
Approach LOS			D				D			F		

Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	21.8
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	195	45
Future Volume (vph)	195	45
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	8.0	
Lane Util. Factor	1.00	
Frt	0.97	
Flt Protected	1.00	
Satd. Flow (prot)	1759	
Flt Permitted	1.00	
Satd. Flow (perm)	1759	
Peak-hour factor, PHF	1.00	1.00
Adj. Flow (vph)	195	45
RTOR Reduction (vph)	4	0
Lane Group Flow (vph)	236	0
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	41.3	
Effective Green, g (s)	41.3	
Actuated g/C Ratio	0.19	
Clearance Time (s)	8.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	330	
v/s Ratio Prot	0.13	
v/s Ratio Perm		
v/c Ratio	0.71	
Uniform Delay, d1	83.8	
Progression Factor	1.00	
Incremental Delay, d2	7.2	
Delay (s)	91.0	
Level of Service	F	
Approach Delay (s)	91.8	
Approach LOS	F	

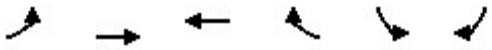
Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	165	95	2035	0	0	2940	240	0	0	0	310	0
Future Volume (vph)	165	95	2035	0	0	2940	240	0	0	0	310	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.8	6.8			6.8					8.4	8.4
Lane Util. Factor		1.00	0.91			0.86					1.00	1.00
Frt		1.00	1.00			0.99					1.00	0.85
Flt Protected		0.95	1.00			1.00					0.95	1.00
Satd. Flow (prot)		1719	4940			6154					1719	1538
Flt Permitted		0.02	1.00			1.00					0.95	1.00
Satd. Flow (perm)		44	4940			6154					1719	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	165	95	2035	0	0	2940	240	0	0	0	310	0
RTOR Reduction (vph)	0	0	0	0	0	4	0	0	0	0	0	53
Lane Group Flow (vph)	0	260	2035	0	0	3176	0	0	0	0	310	7
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	NA		Split			Split	NA
Protected Phases	1	1	6		5	2		4	4		8	8
Permitted Phases	2	2		6	6							
Actuated Green, G (s)		171.4	178.2			163.2					26.6	26.6
Effective Green, g (s)		171.4	178.2			163.2					26.6	26.6
Actuated g/C Ratio		0.78	0.81			0.74					0.12	0.12
Clearance Time (s)		6.8	6.8			6.8					8.4	8.4
Vehicle Extension (s)		2.0	3.0			3.0					3.0	3.0
Lane Grp Cap (vph)		96	4001			4565					207	185
v/s Ratio Prot		c0.10	0.41			0.52					c0.18	0.00
v/s Ratio Perm		c1.98										
v/c Ratio		2.71	0.51			0.70					1.50	0.04
Uniform Delay, d1		68.9	6.8			15.2					96.7	85.4
Progression Factor		1.12	0.13			0.44					1.00	1.00
Incremental Delay, d2		790.8	0.4			0.1					247.6	0.1
Delay (s)		867.8	1.2			6.8					344.3	85.5
Level of Service		F	A			A					F	F
Approach Delay (s)			99.4			6.8			0.0			302.3
Approach LOS			F			A			A			F

Intersection Summary			
HCM 2000 Control Delay	61.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	2.64		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	30.4
Intersection Capacity Utilization	96.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	60
Future Volume (vph)	60
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	60
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	340	2635	2155	450	725	305
Future Volume (vph)	340	2635	2155	450	725	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.9	7.9	7.9	7.9	10.0	10.0
Lane Util. Factor	0.97	0.91	0.91	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3335	4940	4940	1538	3335	1538
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3335	4940	4940	1538	3335	1538
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	340	2635	2155	450	725	305
RTOR Reduction (vph)	0	0	0	76	0	1
Lane Group Flow (vph)	340	2635	2155	374	725	304
Turn Type	Prot	NA	NA	Perm	Prot	pt+ov
Protected Phases	1	1 6	2		8	8 1
Permitted Phases				2		
Actuated Green, G (s)	38.1	151.4	105.4	105.4	50.7	98.8
Effective Green, g (s)	38.1	151.4	105.4	105.4	50.7	98.8
Actuated g/C Ratio	0.17	0.69	0.48	0.48	0.23	0.45
Clearance Time (s)	7.9		7.9	7.9	10.0	
Vehicle Extension (s)	2.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	577	3399	2366	736	768	690
v/s Ratio Prot	0.10	c0.53	c0.44		c0.22	0.20
v/s Ratio Perm				0.24		
v/c Ratio	0.59	0.78	0.91	0.51	0.94	0.44
Uniform Delay, d1	83.7	22.9	53.0	39.5	83.3	41.6
Progression Factor	1.36	0.54	0.48	0.46	1.00	1.00
Incremental Delay, d2	0.4	0.5	4.3	1.5	19.9	0.5
Delay (s)	113.9	12.9	29.9	19.9	103.2	42.1
Level of Service	F	B	C	B	F	D
Approach Delay (s)		24.4	28.1		85.1	
Approach LOS		C	C		F	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	220.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Zone Q Totals

Number of Intersections	12
Control Delay / Veh (s/v)	28
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	29
Total Delay (hr)	556
Stops / Veh	0.42
Stops (#)	29177
Average Speed (mph)	15
Total Travel Time (hr)	845
Distance Traveled (mi)	12656
Performance Index	636.9

Zone Q Totals

Number of Intersections	12
Control Delay / Veh (s/v)	24
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	24
Total Delay (hr)	448
Stops / Veh	0.40
Stops (#)	27297
Average Speed (mph)	17
Total Travel Time (hr)	734
Distance Traveled (mi)	12597
Performance Index	523.4

Zone Q Totals

Number of Intersections	12
Control Delay / Veh (s/v)	52
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	52
Total Delay (hr)	1277
Stops / Veh	0.45
Stops (#)	39373
Average Speed (mph)	10
Total Travel Time (hr)	1642
Distance Traveled (mi)	15941
Performance Index	1386.4

Zone Q Totals

Number of Intersections	12
Control Delay / Veh (s/v)	44
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	44
Total Delay (hr)	1062
Stops / Veh	0.43
Stops (#)	37020
Average Speed (mph)	11
Total Travel Time (hr)	1426
Distance Traveled (mi)	15959
Performance Index	1164.9

Zone V Totals

Number of Intersections	12
Control Delay / Veh (s/v)	48
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	48
Total Delay (hr)	1070
Stops / Veh	0.44
Stops (#)	35100
Average Speed (mph)	11
Total Travel Time (hr)	1422
Distance Traveled (mi)	15134
Performance Index	1167.5

Zone A Totals

Number of Intersections	12
Control Delay / Veh (s/v)	40
Queue Delay / Veh (s/v)	2
Total Delay / Veh (s/v)	42
Total Delay (hr)	901
Stops / Veh	0.37
Stops (#)	28967
Average Speed (mph)	12
Total Travel Time (hr)	1243
Distance Traveled (mi)	14848
Performance Index	981.6

Zone v Totals

Number of Intersections	12
Control Delay / Veh (s/v)	71
Queue Delay / Veh (s/v)	10
Total Delay / Veh (s/v)	81
Total Delay (hr)	1897
Stops / Veh	0.48
Stops (#)	40539
Average Speed (mph)	7
Total Travel Time (hr)	2266
Distance Traveled (mi)	15742
Performance Index	2009.4

Zone A Totals

Number of Intersections	12
Control Delay / Veh (s/v)	57
Queue Delay / Veh (s/v)	10
Total Delay / Veh (s/v)	67
Total Delay (hr)	1504
Stops / Veh	0.50
Stops (#)	40522
Average Speed (mph)	8
Total Travel Time (hr)	1858
Distance Traveled (mi)	15264
Performance Index	1616.3

Zone A Totals

Number of Intersections	11
Control Delay / Veh (s/v)	59
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	59
Total Delay (hr)	1255
Stops / Veh	0.42
Stops (#)	31771
Average Speed (mph)	9
Total Travel Time (hr)	1604
Distance Traveled (mi)	15185
Performance Index	1343.6

Zone A Totals

Number of Intersections	11
Control Delay / Veh (s/v)	55
Queue Delay / Veh (s/v)	1
Total Delay / Veh (s/v)	56
Total Delay (hr)	1144
Stops / Veh	0.42
Stops (#)	31265
Average Speed (mph)	10
Total Travel Time (hr)	1488
Distance Traveled (mi)	15030
Performance Index	1231.3