FORRO RESIDENTIAL
TRAFFIC IMPACT STUDY

LOVELAND, COLORADO

JULY 2023

Prepared for:

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Project #2266

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

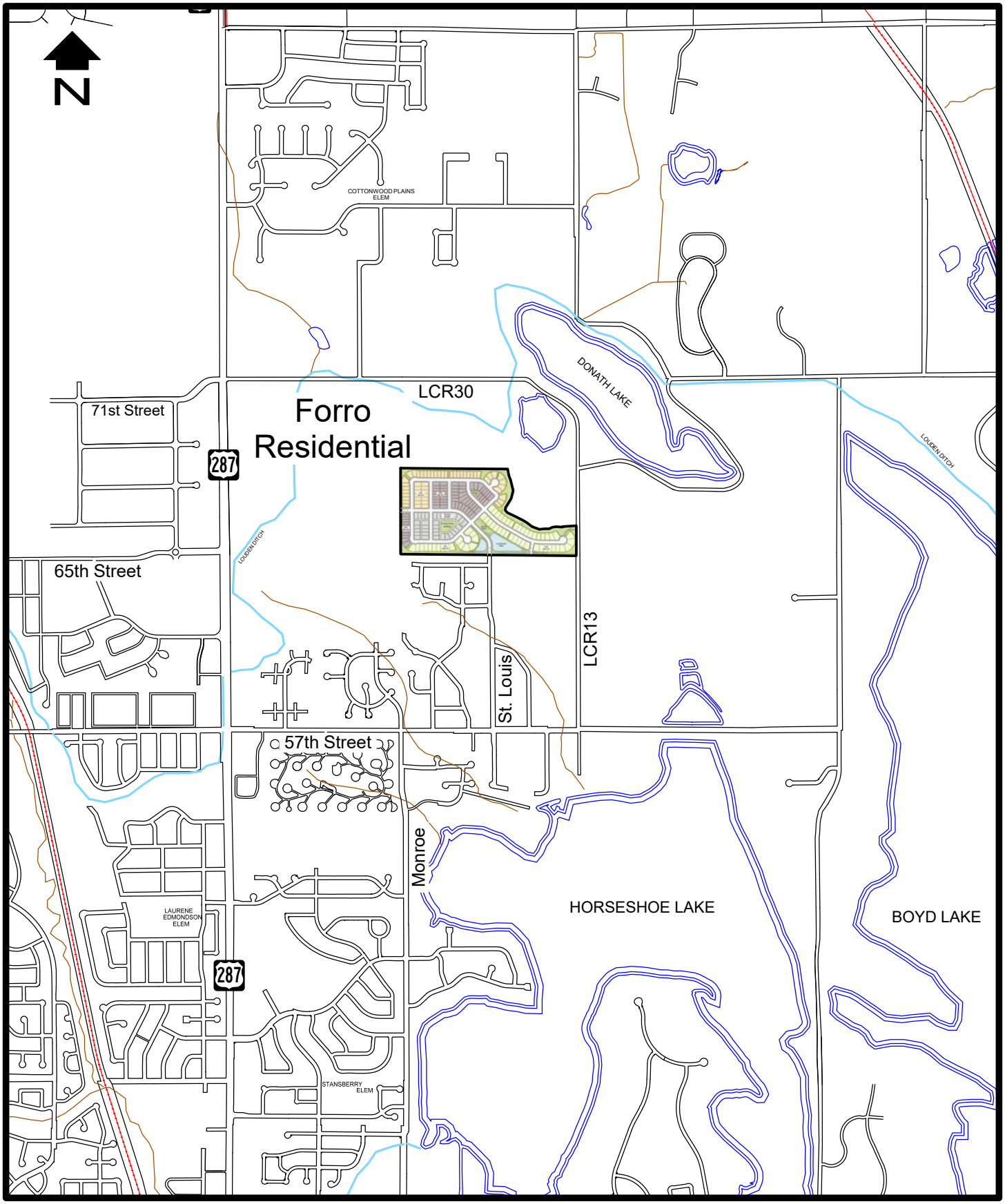
I. INTRODUCTION

This traffic impact study (TIS) is for the proposed Forro Residential development located in Loveland, Colorado. The Forro Residential site is located approximately a half of a mile north of East 57th Street and west of (adjacent to) Larimer County Road 13 (LCR13). The location of the Forro Residential site is shown in Figure 1. This TIS addresses the operation at the key intersections for the short range (2027) and long range (2045) futures.

This study involved the collection of data, a review of previous developments and studies in the area, trip generation, trip distribution, trip assignment, and the operation analyses of the key intersections in the area for the existing conditions, the short range (2027) future, and the long range (2045) future. During the course of this analysis, numerous contacts were made with City staff and the project developer (Post Modern Development). Since this land is within the City of Loveland, the traffic impact study guidelines for Loveland, as contained in the "Larimer County Urban Area Street Standards" (LCUASS) were used.

The following intersections, as agreed to in the scoping discussions, were addressed in this traffic study: US287/57th Street (major intersection), US287/65th Street (major intersection), 57th Street/Monroe (major intersection), 57th Street/St. Louis (minor intersection), 57th Street/LCR13-Koldeway (minor intersection), 65th Street/LCR13 (future minor intersection), 65th Street/Monroe (future minor intersection), 65th Street/St. Louis (future minor intersection), and the Site Access (minor intersections) intersections. Appendix A contains the Transportation Impact Study Base Assumptions form and related attachments for the Forro Residential project.

THE INITIAL SUBMITTAL OF THE TRAFFIC IMPACT STUDY IS NOT SIGNED/ STAMPED. THE FINAL TRAFFIC IMPACT STUDY WILL BE SIGNED/STAMPED REFLECTING COMMENTS FROM THE CITY OF LOVELAND.



SCALE: 1"=2000'

SITE LOCATION

Figure 1

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II. EXISTING CONDITIONS

Land Use

The project site is currently vacant. The land surrounding the site consists of primarily residential uses. There are residential uses to the south of the Forro Residential site. The center of Loveland lies to the south of the Forro Residential project.

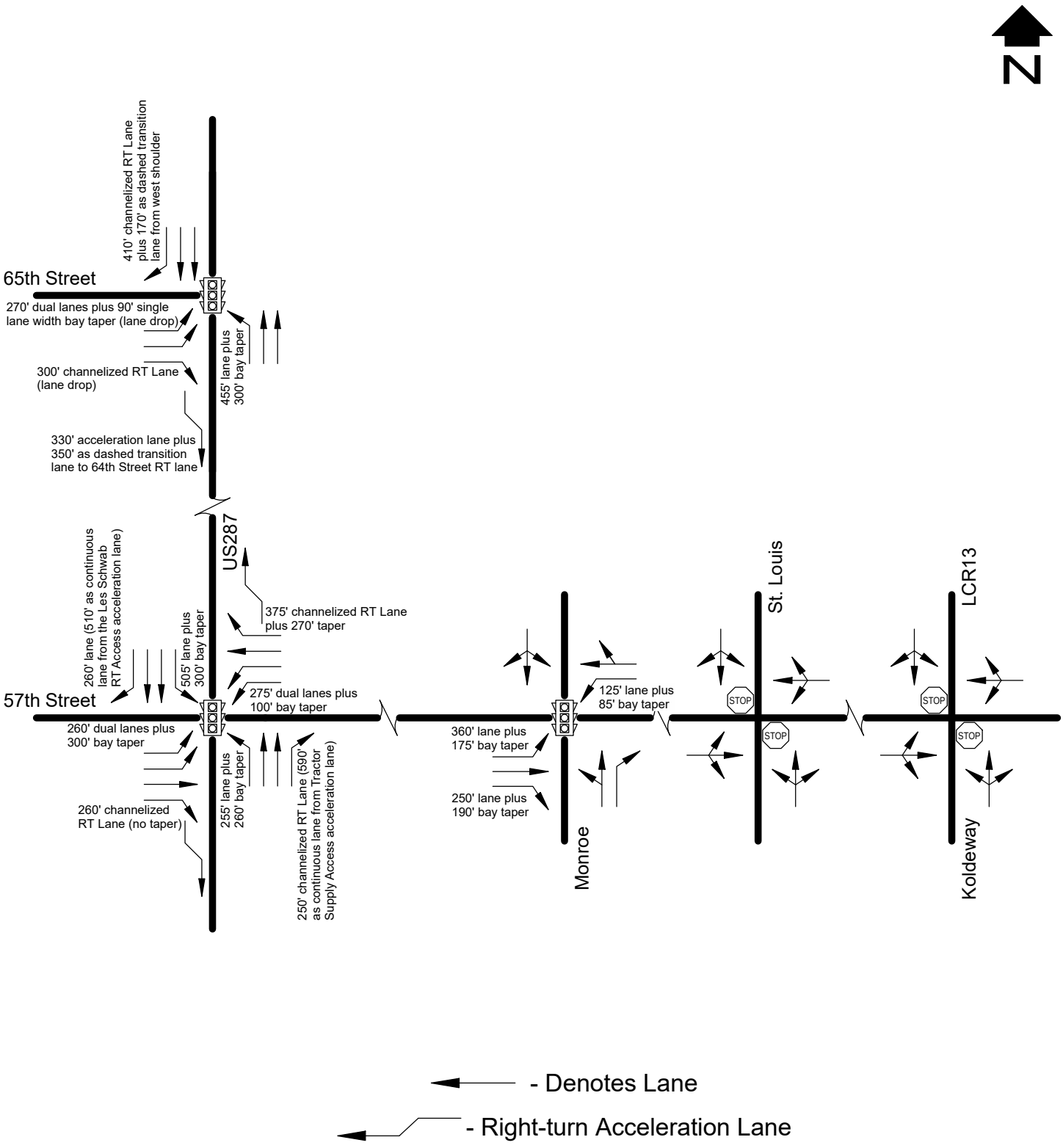
Roads

A schematic of the current geometry at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, and 57th Street/LCR13-Koldeway intersections is shown in Figure 2. The approximate auxiliary lane lengths are also shown. The key existing streets are US287, 57th Street, 65th Street, Monroe Avenue, St. Louis Avenue, and LCR13.

US287 is classified as a six-lane arterial street. Currently, US287 has a four-lane cross section with auxiliary turn lanes at intersections. The posted speed on US287 is 50 mph south of the US287/57th Street intersection. North of this intersection, the posted speed steps up to 55 mph in the northbound direction. Just south of the US287/65th Street intersection, the posted speed is 50 mph in the southbound direction. At the US287/57th Street intersection, US287 has northbound and southbound left-turn lanes, two through lanes in each direction, and northbound and southbound right-turn lanes. There are northbound and southbound right-turn acceleration lanes at this intersection. The US287/57th Street intersection has signal control. At the US287/65th Street intersection, US287 has a northbound left-turn lane, a southbound right-turn lane, and two through lanes in each direction. There is a southbound right-turn acceleration lane at this intersection. The US287/65th Street intersection has signal control.

Fifty-Seventh Street is classified as a four-lane arterial street between Taft Avenue and Monroe Avenue. Fifty-Seventh Street is classified as a major collector street east of Monroe Avenue. Currently, 57th Street has a two-lane cross section with some auxiliary turn lanes at some intersections. Fifty-Seventh Street has a posted speed of 35 mph east of US287 and a posted speed of 40 mph west of US287. At the US287/57th Street intersection, 57th Street has dual eastbound and westbound left-turn lanes, one through lane in each direction, and eastbound and westbound right-turn lanes. At the 57th Street/Monroe intersection, 57th Street has eastbound and westbound left-turn lanes, one through lane in each direction, and an eastbound right-turn lane. The 57th Street/Monroe intersection has signal control. At the 57th Street/St. Louis and 57th Street/LCR13-Koldeway intersections, 57th Street has one through lane in each direction with no auxiliary lanes. The 57th Street/St. Louis and 57th Street/LCR13-Koldeway intersections have stop sign control on the minor legs.

Sixty-Fifth Street is classified as a major collector street. Currently, 65th Street has a four-lane cross section between US287 and the roundabout at Harrison Avenue. The posted speed on 65th Street is 25 mph. At the US287/65th Street intersection, 65th Street has eastbound dual left-turn lanes and an eastbound channelized right-turn lane.



EXISTING INTERSECTION GEOMETRY

Figure 2

Monroe Avenue is classified as a major collector street south of 57th Street. Monroe Avenue is classified as a local street north of 57th Street. Currently, Monroe Avenue has a two-lane cross section with some auxiliary turn lanes at intersections south of 57th Street. The posted speed on Monroe Avenue is 35 mph south of 57th Street and 30 mph north of 57th Street. At the 57th Street/Monroe intersection, Monroe Avenue has a northbound right-turn lane and a combined northbound left-turn/through lane. All movements are combined into a single lane on the north leg of Monroe Avenue.

St. Louis Avenue is classified as a local street. St. Louis Avenue has all movements combined in single lanes at the 57th Street/St. Louis intersection. The posted speed on St. Louis Avenue is 25 mph.

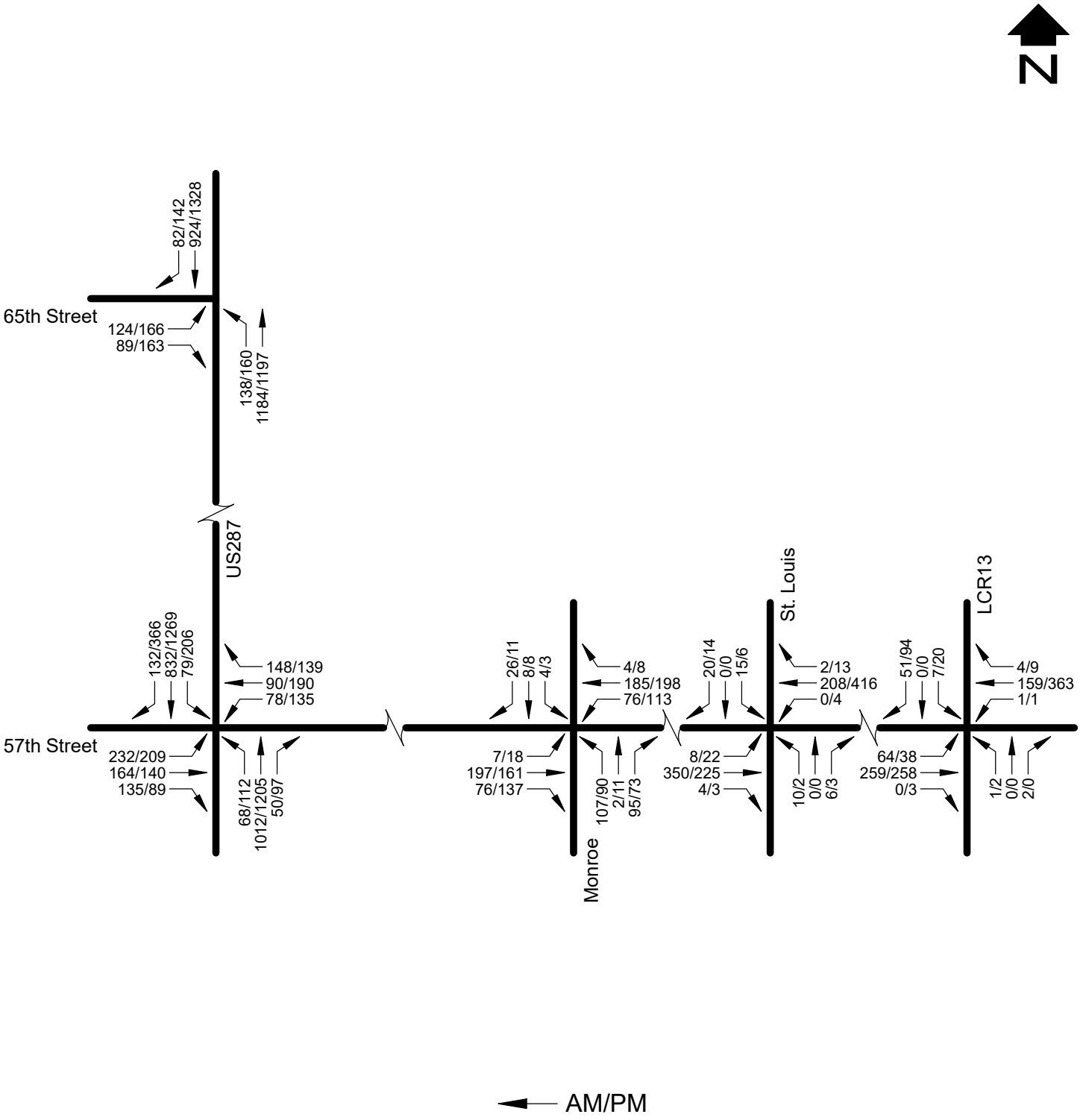
Larimer County Road 13 is classified as a major collector street north of 57th Street. Koldeway Court is south of 57th Street and is classified as a local street. Koldeway Court and LCR13 are slightly offset. Currently, LCR13 has a two-lane cross section. The posted speed on LCR13 is 40 mph. At the 57th Street/LCR13-Koldeway intersection, LCR13-Koldeway Court has all movements combined into single lanes.

Existing Traffic

Recent weekday peak hour traffic counts at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, and 57th Street/LCR13-Koldeway intersections are shown in Figure 3. Raw traffic counts are provided in Appendix B. Traffic counts at the US287/57th Street intersection were obtained in June 2022. Traffic counts at the US287/65th Street intersection were obtained in September 2022. Traffic counts at the 57th Street/Monroe intersection were obtained in February 2022. Traffic counts at the 57th Street/LCR13-Koldeway intersection were obtained in November 2022. Traffic counts at the 57th Street/St. Louis intersection were obtained in December 2022. Since counts were performed on different days, the traffic volumes at the key intersections were averaged/balanced and are shown in Figure 4.

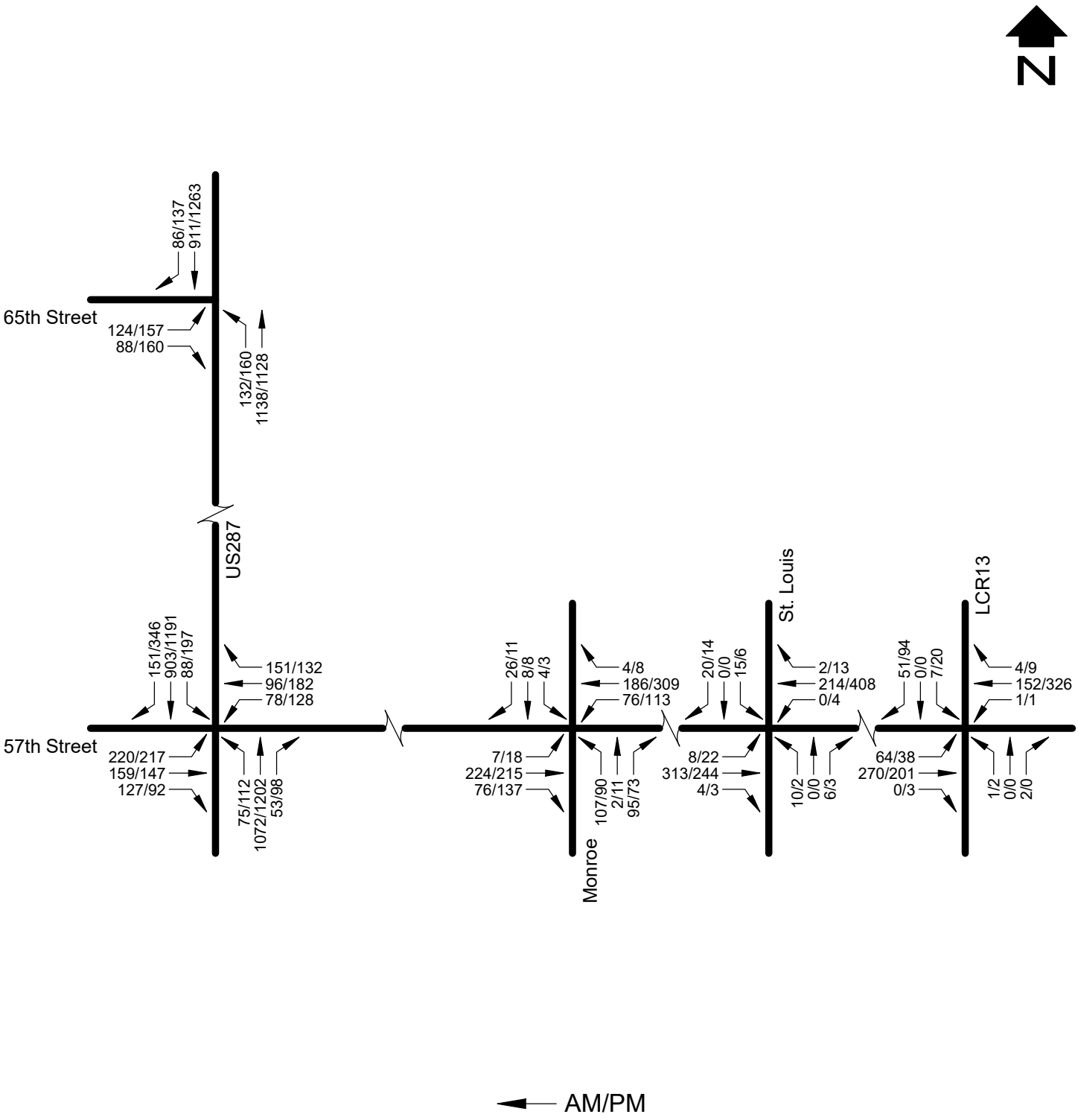
Existing Operation

Using the volumes shown in Figure 4, the current peak hour operation at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, and 57th Street/LCR13-Koldeway intersections is shown in Table 1. Calculation forms for these analyses are provided in Appendix C. The City of Loveland provided information regarding existing signal timing for the US287/57th Street and US287/65th Street intersections. The key intersections were analyzed using the signalized and unsignalized intersection techniques from the Highway Capacity Manual (HCM), 6th Edition. Acceptable operation is defined by the City of Loveland as level of service (LOS) C or better overall. At intersections on State Highways, overall LOS D is acceptable. At major intersections, any leg can operate at level of service D and any movement can operate at level of service E. At minor intersections, any leg can operate at level of service E and



RECENT PEAK HOUR TRAFFIC

Figure 3



AVERAGED/BALANCED RECENT PEAK HOUR TRAFFIC

Figure 4

TABLE 1 Current Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
US287/57th Street (signal)	EB LT	D	D
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	A	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	A	B
	SB T	A	C
	SB RT	A	C
	SB APPROACH	A	C
	OVERALL	B	C
US287/65th Street (signal)	EB LT	D	D
	EB RT	A	A
	EB APPROACH	D	D
	NB LT	A	A
	NB T	A	A
	NB APPROACH	A	A
	SB T	A	A
	SB RT	A	A
	SB APPROACH	A	A
	OVERALL	A	A

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Continued from previous page

TABLE 1
Current Peak Hour Operation

Intersection	Movement	Level of Service	
		AM	PM
57th Street/Monroe (signal)	EB LT	A	A
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	A	A
	WB T/RT	A	B
	WB APPROACH	A	A
	NB LT/T	B	B
	NB RT	B	B
	NB APPROACH	B	B
	SB LT/T/RT	B	B
	OVERALL	A	B
57th Street/St. Louis (stop sign)	NB LT/T/RT	B	B
	SB LT/T/RT	B	B
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A
57th Street/LCR13-Koldeway (stop sign)	NB LT/T/RT	B	C
	SB LT/T/RT	B	B
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A

any movement can operate at level of service F. A description of level of service at signalized and unsignalized intersections is provided in Appendix C. The Loveland Motor Vehicle LOS Standards are also provided in Appendix C. As can be seen in Table 1, the key intersections currently meet the Loveland level of service criteria with existing control, signal timing, and geometry.

Existing Pedestrians and Bicycles

During the vehicular traffic counts, pedestrian and bicycle traffic volumes were observed. There were very few pedestrians and bicyclists.

Crash Analysis

Crash data was obtained from the City of Loveland for the US287/57th Street, intersection for a two year, six month period (1/14/2020 to 6/15/2022). At the US287/57th Street intersection, there were 85 reported crashes: 38 rear-end crashes (one crash involved a DUI), 26 crashes involving turning vehicles, 15 sideswipe crashes, three head-on crashes (one crash involved a DUI), and one crash involving a vehicle striking a fixed object. Two crashes did not have enough information to make a crash determination.

Crash data was obtained from the City of Loveland for the US287/65th Street intersection for a five year period (6/1/2017 to 5/31/2022). At the US287/65th Street intersection, there were 50 reported crashes: 27 rear-end crashes (one crash involved a DUI), 14 crashes involving turning vehicles, four sideswipe crashes, one head-on crash, and four crashes involving a vehicle striking a fixed object.

III. PROPOSED DEVELOPMENT

The Forro Residential project is proposed as a residential development. Figure 5 shows the site plan for the Forro Residential project. The analyses in this TIS assumed that the Forro Residential will be built out over the next 3-4 years, following approval. The analysis year for the short range future was assumed to be the year 2027 and the long range future was assumed to be the year 2045.

Access to the Forro Residential site will be via two proposed full-movement accesses to/from future 65th Street. The future 65th Street will connect to LCR13 in the short range (2027) future and extend to US287 by/before the long range (2045) future. The west access will be an extension of St. Louis Avenue. There will also be a future connection to/from the adjacent subdivision (Sugar Creek) to the west.

Trip Generation

Trip generation is important in considering the impact of a development on the existing and proposed street system. Trip Generation, 11th Edition, ITE was used to determine the trips that would be generated by the Forro Residential project. A trip is defined as a one-way vehicle movement from origin to destination. Table 2 shows the expected trip generation from the Forro Residential site on a daily and peak hour basis. The full development trip generation resulted in 2,174 daily trip ends, 155 morning peak hour trip ends, and 207 afternoon peak hour trip ends.

TABLE 2
Trip Generation

Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
215	Single Family Attached	68 D.U.	EQ	468	EQ	9	EQ	21	EQ	21	EQ	16
210	Single Family Detached	177 D.U.	EQ	1706	EQ	33	EQ	92	EQ	107	EQ	63
Total				2174		42		113		128		79

Trip Distribution

Trip distribution for the Forro Residential site was estimated using knowledge of the existing and planned street system, existing traffic patterns, development trends, and engineering judgment. Figure 6 shows the trip distribution used in the following analyses. The trip distribution analysis was agreed to in the scoping discussions and is contained in Appendix A.

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SCALE: 1"=400'

SITE PLAN

Figure 5

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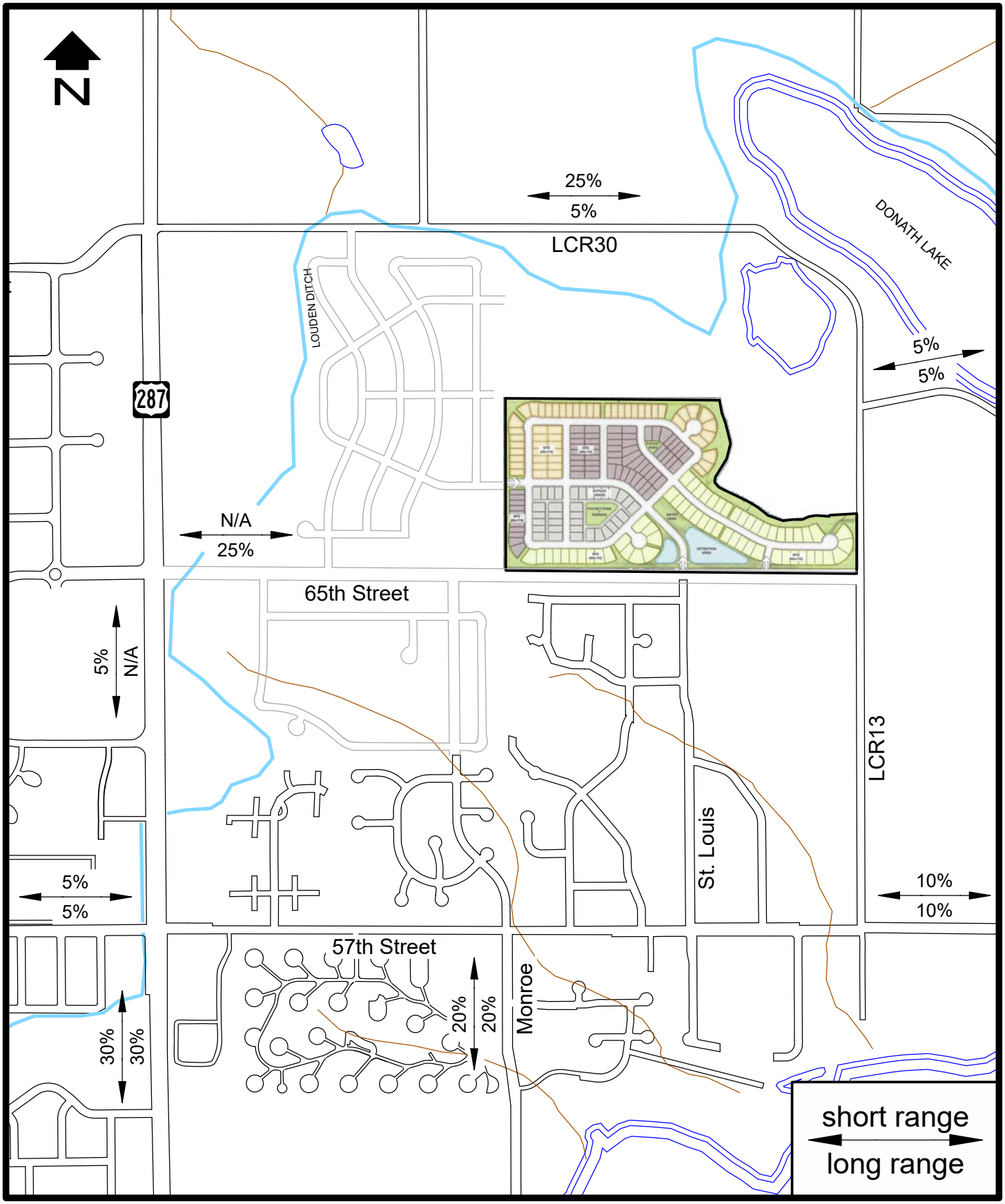

SCALE: 1"=1000'

TRIP DISTRIBUTION

Figure 6

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Traffic Assignment

Trip assignment is the product of both the trip generation and trip distribution processes. Figures 7 and 8 show the short range (2027) and long range (2045) site generated peak hour traffic at the key intersections, respectively.

Background Traffic Projections

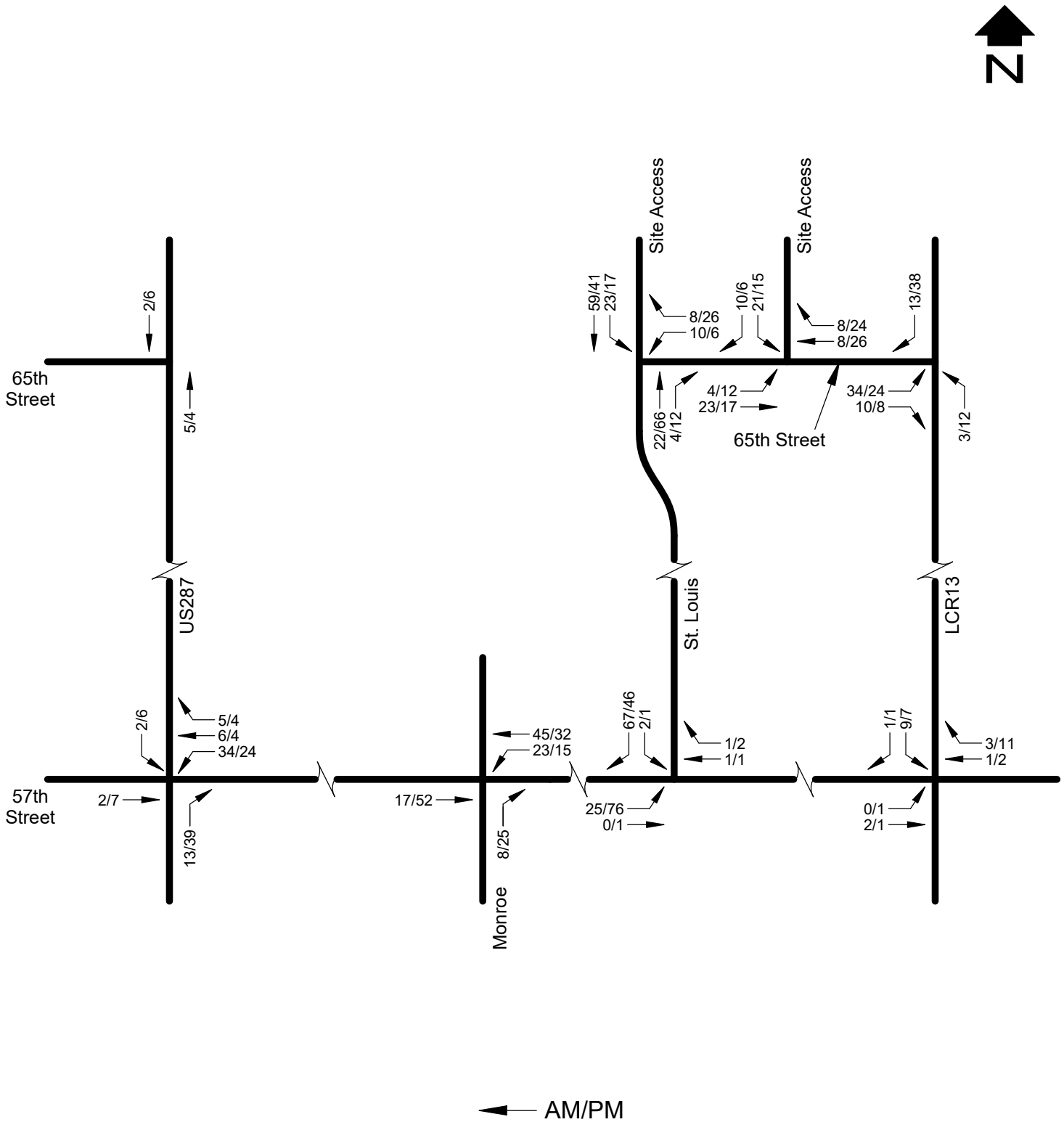
The CDOT 20-year growth factor for US287 is 1.21 for south of 57th Street and 1.24 north of SH392. Background traffic projections for the short range (2027) future horizon were obtained by factoring the existing traffic volumes on 57th Street by approximately one percent per year. There are four known short range development proposals in the area of the Forro Residential. These are: the Wintergreen Apartments site, LifeSpace, Sunrise Medical Clinic, and US287/57th Street Properties. The long range (2045) background traffic includes full development of various other residential (e.g., Sugar Creek) and commercial zoned properties in the area. Figures 9 and 10 show the short range (2027) and long range (2045) background peak hour traffic at the key intersections, respectively.

Total Traffic

The traffic volumes generated by the proposed Forro Residential were added to the background traffic volumes to produce the total traffic volume forecasts for the short range (2027) and long range (2045) futures. Figures 11 and 12 show the short range (2027) and long range (2045) total peak hour traffic, respectively.

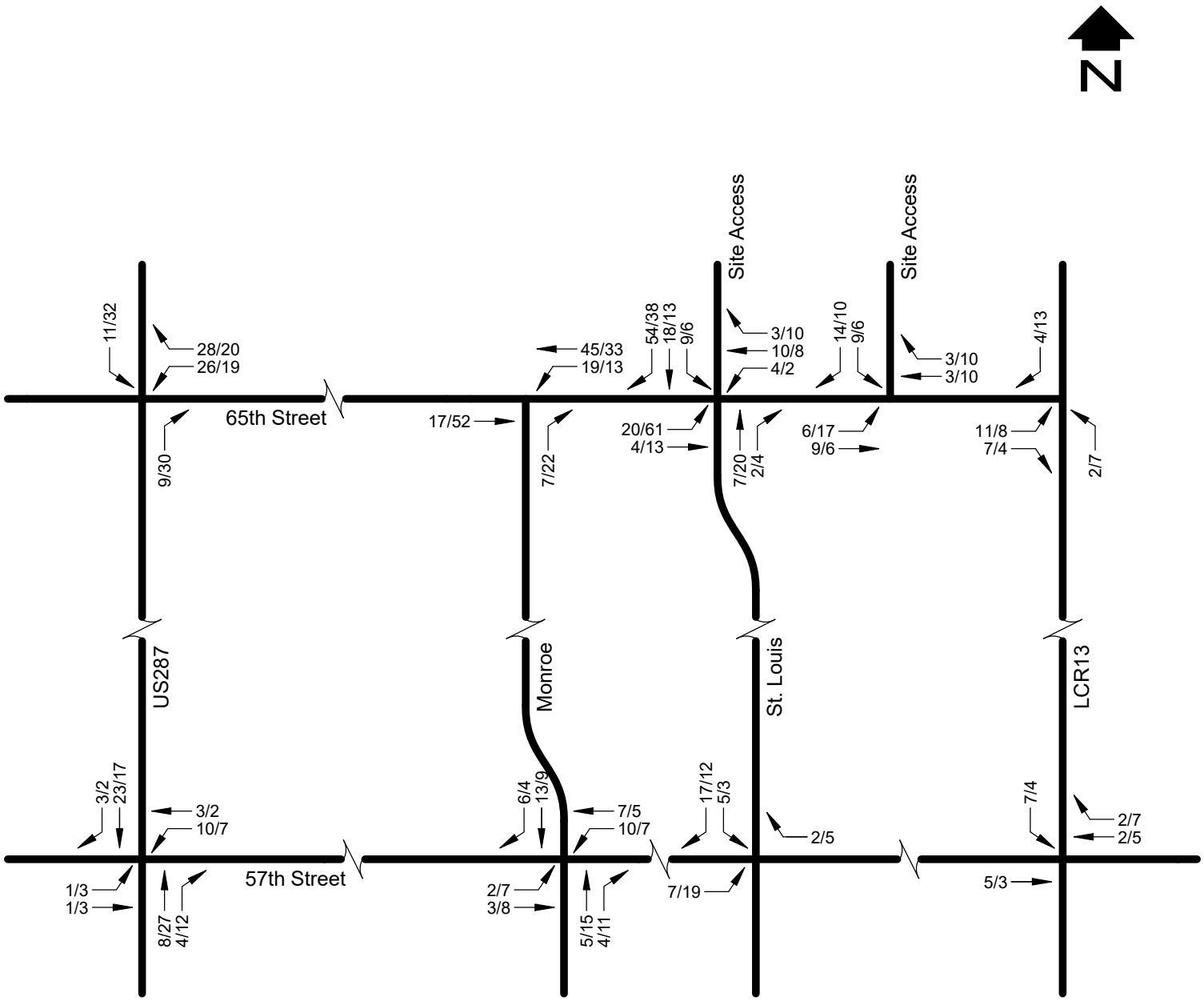
Signal Warrants

As a matter of policy, traffic signals are not installed at any location until such time that signal installation warrants are met according to the Manual on Uniform Traffic Control Devices. The US287/57th Street, US287/65th Street, and 57th Street/Monroe intersections are currently signalized. For the roads in the vicinity of the Forro Residential, four hour and/or eight hour signal warrants are applicable. These warrants require much data and are applied when the traffic is actually on the area road system. It is acknowledged that peak hour signal warrants should not be applied, but since the peak hour forecasts are readily available in a traffic impact study, it is reasonable to use them to estimate whether other signal warrants may be met. If peak hour signal warrants will not be met at a given intersection, it is reasonable to conclude that it is not likely that other signal warrants would be met. If peak hour signal warrants are met, it merely indicates that further evaluation should occur in the future as the development occurs. However, a judgment can be made that some intersections will likely meet other signal warrants. None of the stop sign controlled intersections analyzed in this study will meet peak hour signal warrants or signal spacing criteria and will not be signalized.



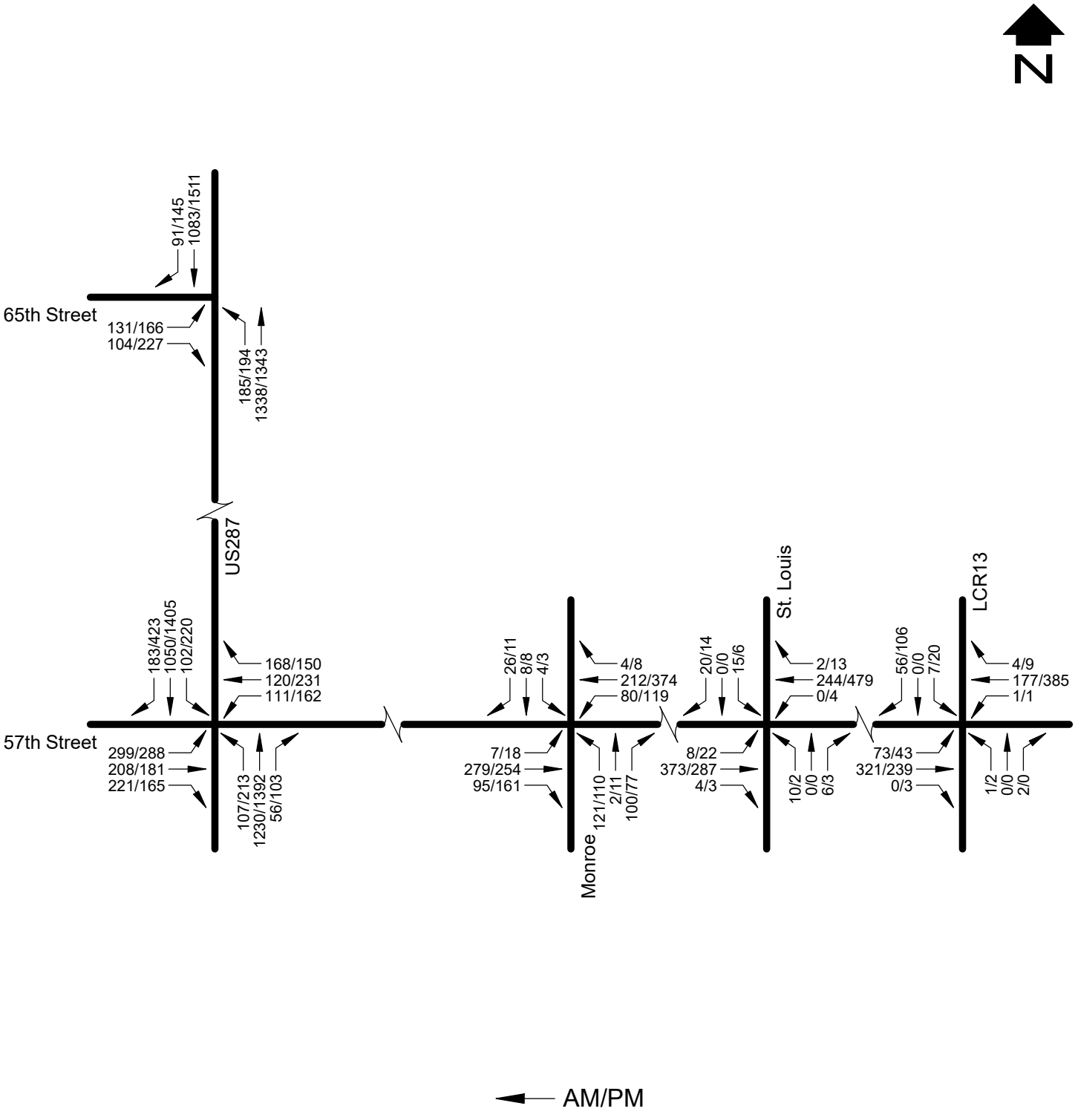
SHORT RANGE (2027) SITE GENERATED PEAK HOUR TRAFFIC

Figure 7



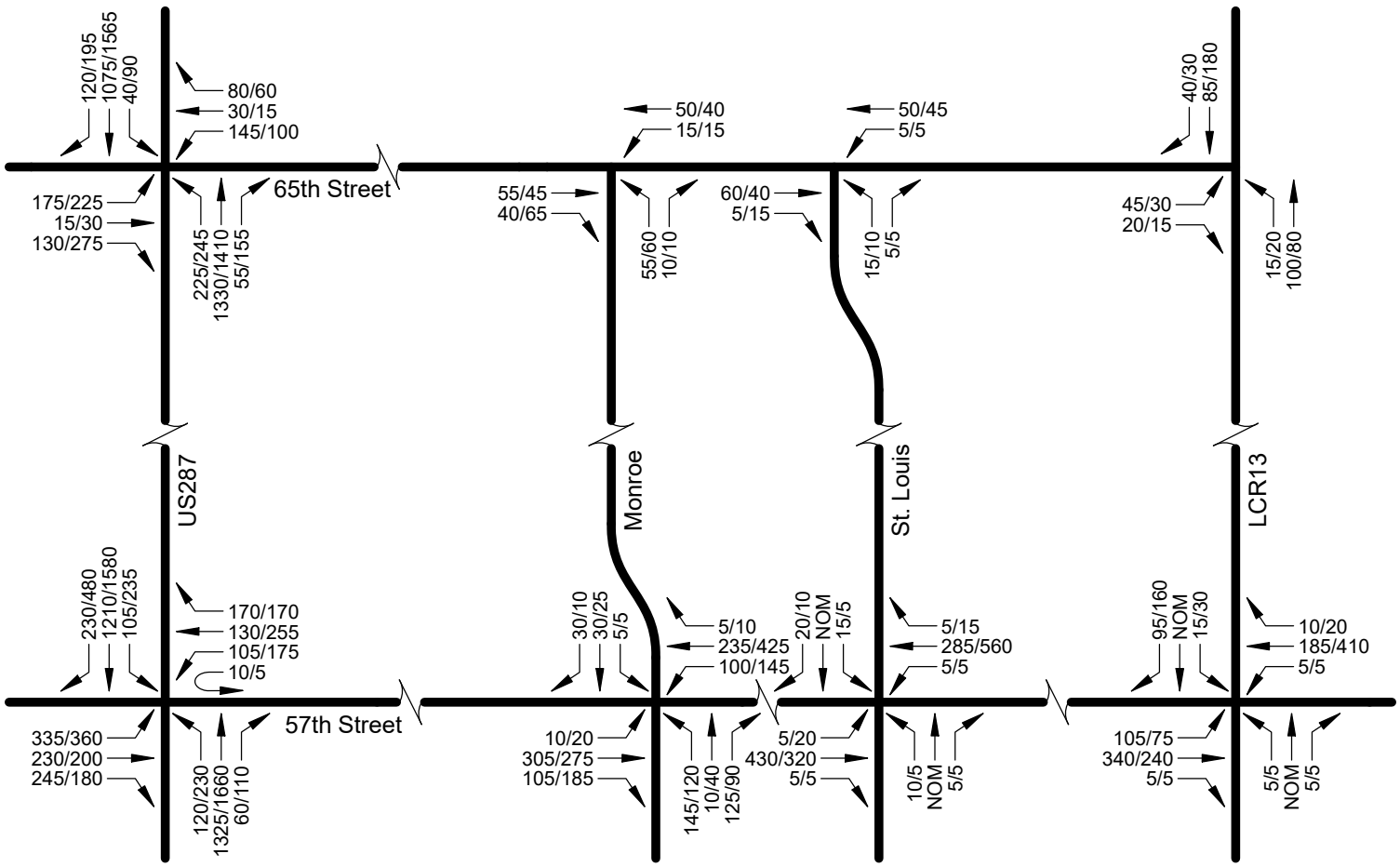
LONG RANGE (2045) SITE GENERATED PEAK HOUR TRAFFIC

Figure 8



SHORT RANGE (2027) BACKGROUND PEAK HOUR TRAFFIC

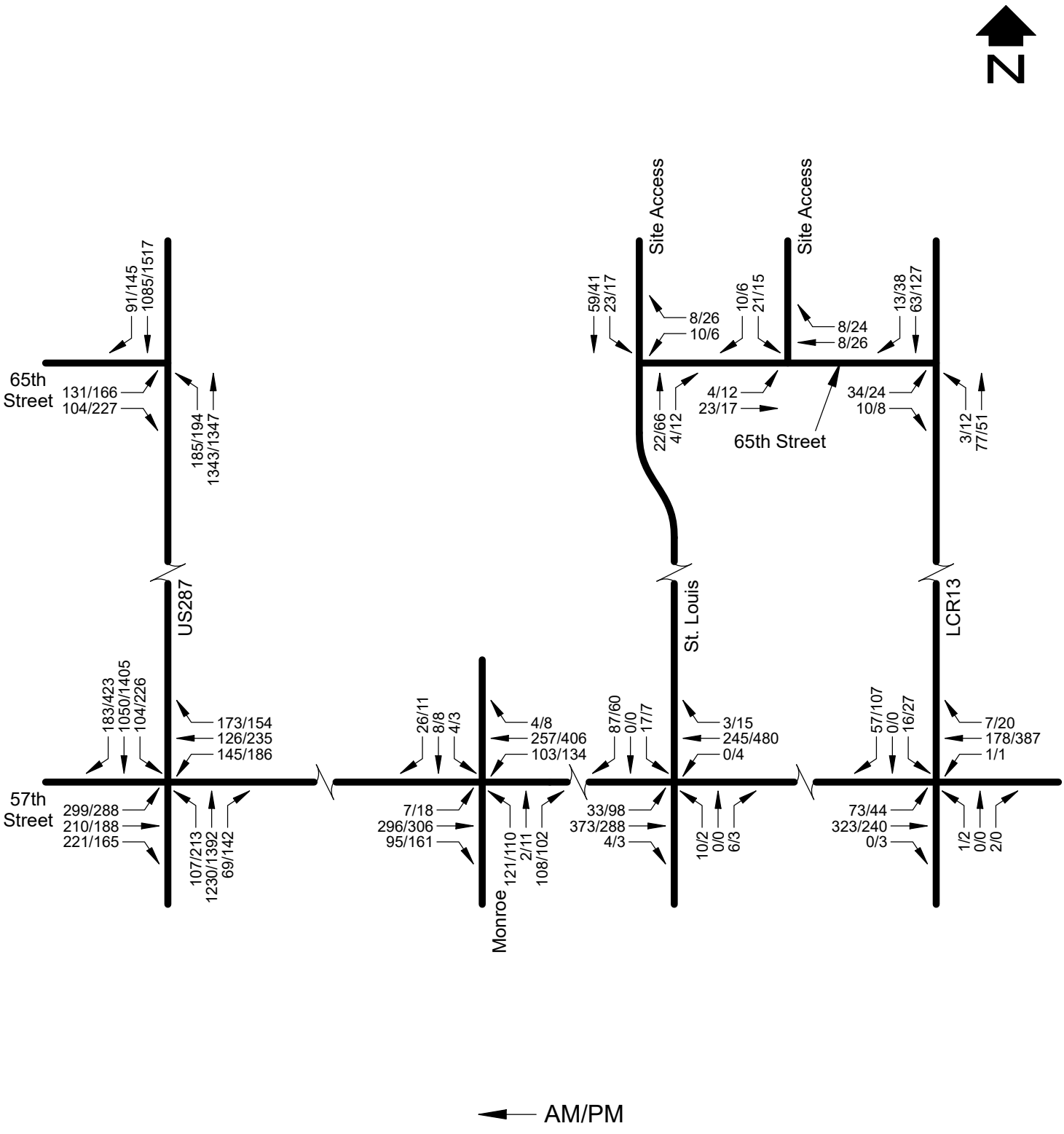
Figure 9



← AM/PM
Rounded to Nearest
5 Vehicles

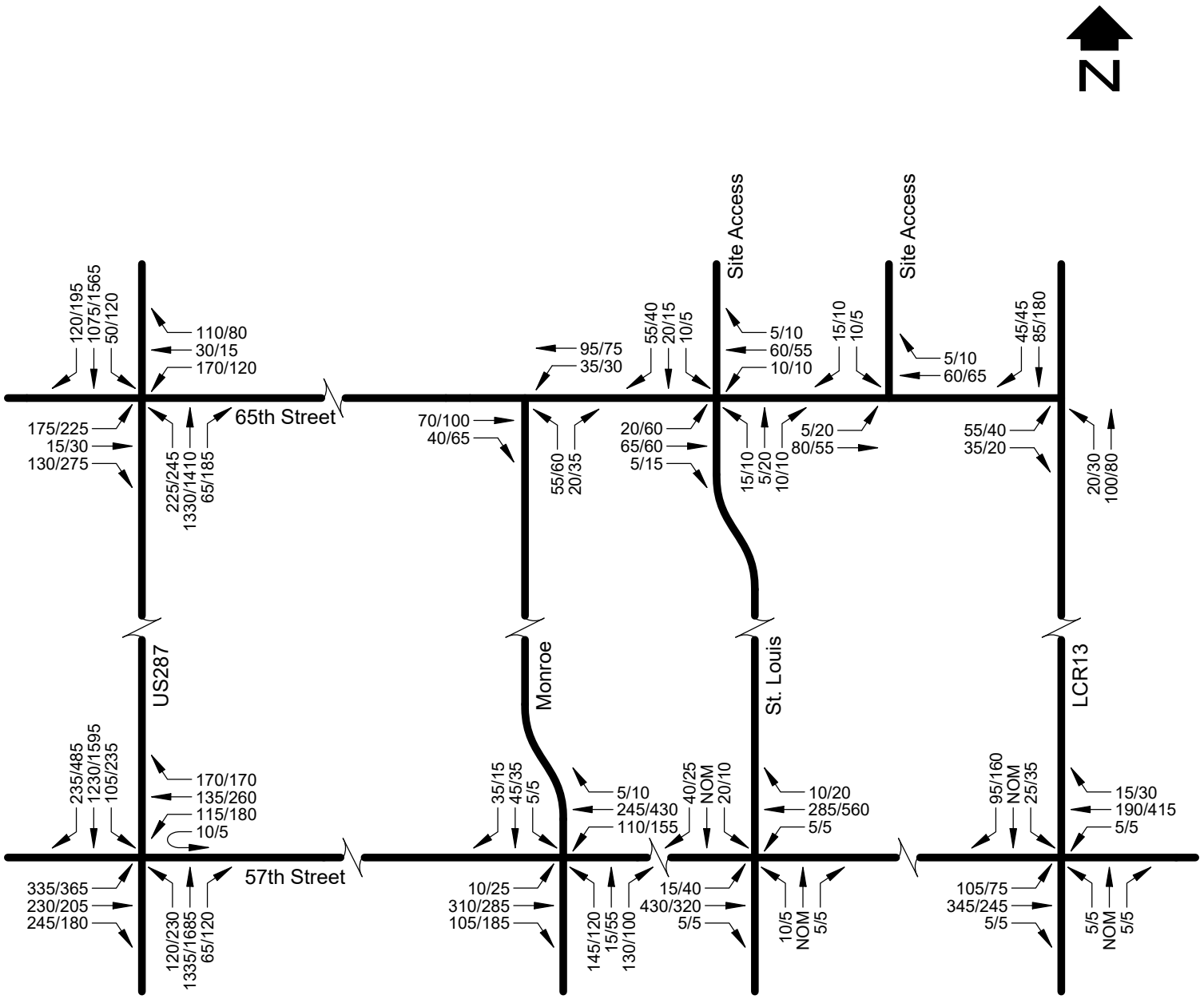
LONG RANGE (2045) BACKGROUND PEAK HOUR TRAFFIC

Figure 10



SHORT RANGE (2027) TOTAL PEAK HOUR TRAFFIC

Figure 11



← AM/PM
Rounded to Nearest
5 Vehicles

LONG RANGE (2045) TOTAL PEAK HOUR TRAFFIC

Figure 12

Operation Analysis

Operation analyses were performed at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/ Monroe, 65th Street/St. Louis, 65th Street/Site Access, and 65th Street/LCR13 intersections. The operations analyses were conducted for the short range future, reflecting a year 2027 condition, and long range future, reflecting a year 2045 condition. The long range (2045) operational analyses are used for planning and informational purposes only.

Table 3 shows the short range (2027) background peak hour operation at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, and 57th Street/LCR13-Koldeway intersections. All of the key intersections meet the Loveland level of service criteria in the peak hours. Calculation forms for these analyses are provided in Appendix D.

Table 4 shows the long range (2045) background peak hour operation at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/Monroe, 65th Street/St. Louis, and 65th Street/LCR13 intersections. Calculation forms are provided in Appendix E.

Using the traffic volumes shown in Figure 11, Table 5 shows the short range (2027) total peak hour operation at the US287/57th Street, US287/65th Street, 57th Street/ Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/St. Louis, 65th Street/Site Access, and 65th Street/LCR13 intersections. Calculation forms for these analyses are provided in Appendix F. All of the key intersections meet the Loveland level of service criteria in the peak hours.

Using the traffic volumes shown in Figure 12, Table 6 shows the long range (2045) total peak hour operation at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/Monroe, 65th Street/St. Louis, 65th Street/Site Access, and 65th Street/LCR13 intersections. Calculation forms for these analyses are provided in Appendix G.

Geometric Requirements

Figure 13 shows the short range (2027) approach geometry at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/St. Louis, 65th Street/Site Access, and 65th Street/LCR13 intersections. The geometry at the US287/57th Street, US287/65th Street, 57th Street/ Monroe, and 57th Street/LCR13-Koldeway intersections can continue to remain as it exists today. Auxiliary lanes will not be required at the 65th Street/LCR13 intersection or the Site Accesses to 65th Street. At the 57th Street/St. Louis intersection, an eastbound left-turn lane is required based upon the afternoon peak hour traffic forecast. Due to existing physical constraints with existing intersections to the west, it is recommended that this lane provide 100 feet of storage plus 120 feet of bay taper.

TABLE 3 Short Range (2027) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
US287/57th Street (signal)	EB LT	D	D
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	A	B
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	A	B
	SB T	A	C
	SB RT	A	C
	SB APPROACH	A	C
	OVERALL	B	C
US287/65th Street (signal)	EB LT	D	D
	EB RT	A	A
	EB APPROACH	D	D
	NB LT	A	A
	NB T	A	A
	NB APPROACH	A	A
	SB T	A	A
	SB RT	A	A
	SB APPROACH	A	A
	OVERALL	A	A

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TABLE 3
Short Range (2027) Background Peak Hour Operation

Intersection	Movement	Level of Service	
		AM	PM
57th Street/Monroe (signal)	EB LT	A	A
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	A	A
	WB T/RT	A	B
	WB APPROACH	A	A
	NB LT/T	B	B
	NB RT	B	B
	NB APPROACH	B	B
	SB LT/T/RT	B	B
	OVERALL	B	B
57th Street/St. Louis (stop sign)	NB LT/T/RT	B	B
	SB LT/T/RT	B	B
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A
57th Street/LCR13-Koldeway (stop sign)	NB LT/T/RT	B	C
	SB LT/T/RT	B	B
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A

TABLE 4 Long Range (2045) Background Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
US287/57th Street (signal)	EB LT	D	E (63.1 secs)
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	B	D
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	D
	SB T	C	C
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	C	D
US287/65th Street (signal)	EB LT	D	D
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	A	B
	NB T	B	B
	NB RT	A	B
	NB APPROACH	B	B
	SB LT	A	B
	SB T	B	B
	SB RT	A	A
	SB APPROACH	B	B
	OVERALL	B	B

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TABLE 4
Long Range (2045) Background Peak Hour Operation

Intersection	Movement	Level of Service	
		AM	PM
57th Street/Monroe (signal)	EB LT	A	A
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	A	A
	WB T/RT	A	B
	WB APPROACH	A	A
	NB LT/T	B	B
	NB RT	B	B
	NB APPROACH	B	B
	SB LT/T/RT	B	B
	OVERALL	B	B
57th Street/St. Louis (stop sign)	NB LT/T/RT	C	C
	SB LT/T/RT	B	C
	EB LT	A	A
	WB LT	A	A
	OVERALL	A	A
57th Street/LCR13-Koldeway (stop sign)	NB LT/T/RT	C	C
	SB LT/T	C	C
	SB RT	A	B
	SB APPROACH	B	B
	EB LT	A	A
	WB LT	A	A
	OVERALL	A	A
65th Street/Monroe (stop sign)	NB LT/RT	A	A
	WB LT/T	A	A
	OVERALL	A	A
65th Street/St. Louis (stop sign)	NB LT/RT	A	A
	WB LT/T	A	A
	OVERALL	A	A
65th Street/LCR13 (stop sign)	EB LT/RT	B	B
	NB LT/T	A	A
	OVERALL	A	A

TABLE 5 Short Range (2027) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
US287/57th Street (signal)	EB LT	D	D
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	A	D
	NB T	C	D
	NB RT	A	A
	NB APPROACH	B	D
	SB LT	B	D
	SB T	A	D
	SB RT	A	C
	SB APPROACH	A	D
	OVERALL	B	D
US287/65th Street (signal)	EB LT	D	D
	EB RT	A	A
	EB APPROACH	D	D
	NB LT	A	A
	NB T	A	A
	NB APPROACH	A	A
	SB T	A	A
	SB RT	A	A
	SB APPROACH	A	A
	OVERALL	A	A

Continued on next page

Continued from previous page

TABLE 5
Short Range (2027) Total Peak Hour Operation

Intersection	Movement	Level of Service	
		AM	PM
57th Street/Monroe (signal)	EB LT	A	A
	EB T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT	A	A
	WB T/RT	A	B
	WB APPROACH	A	A
	NB LT/T	B	B
	NB RT	B	B
	NB APPROACH	B	B
	SB LT/T/RT	B	B
	OVERALL	B	B
57th Street/St. Louis (stop sign)	NB LT/T/RT	C	C
	SB LT/T/RT	B	B
	EB LT	A	A
	WB LT	A	A
	OVERALL	A	A
57th Street/LCR13-Koldeway (stop sign)	NB LT/T/RT	B	C
	SB LT/T/RT	B	C
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A
65th Street/St. Louis (stop sign)	WB LT/RT	A	A
	SB LT/T	A	A
	OVERALL	A	A
65th Street/Site Access (stop sign)	SB LT/RT	A	A
	EB LT/T	A	A
	OVERALL	A	A
65th Street/LCR13 (stop sign)	EB LT/RT	A	B
	NB LT/T	A	A
	OVERALL	A	A

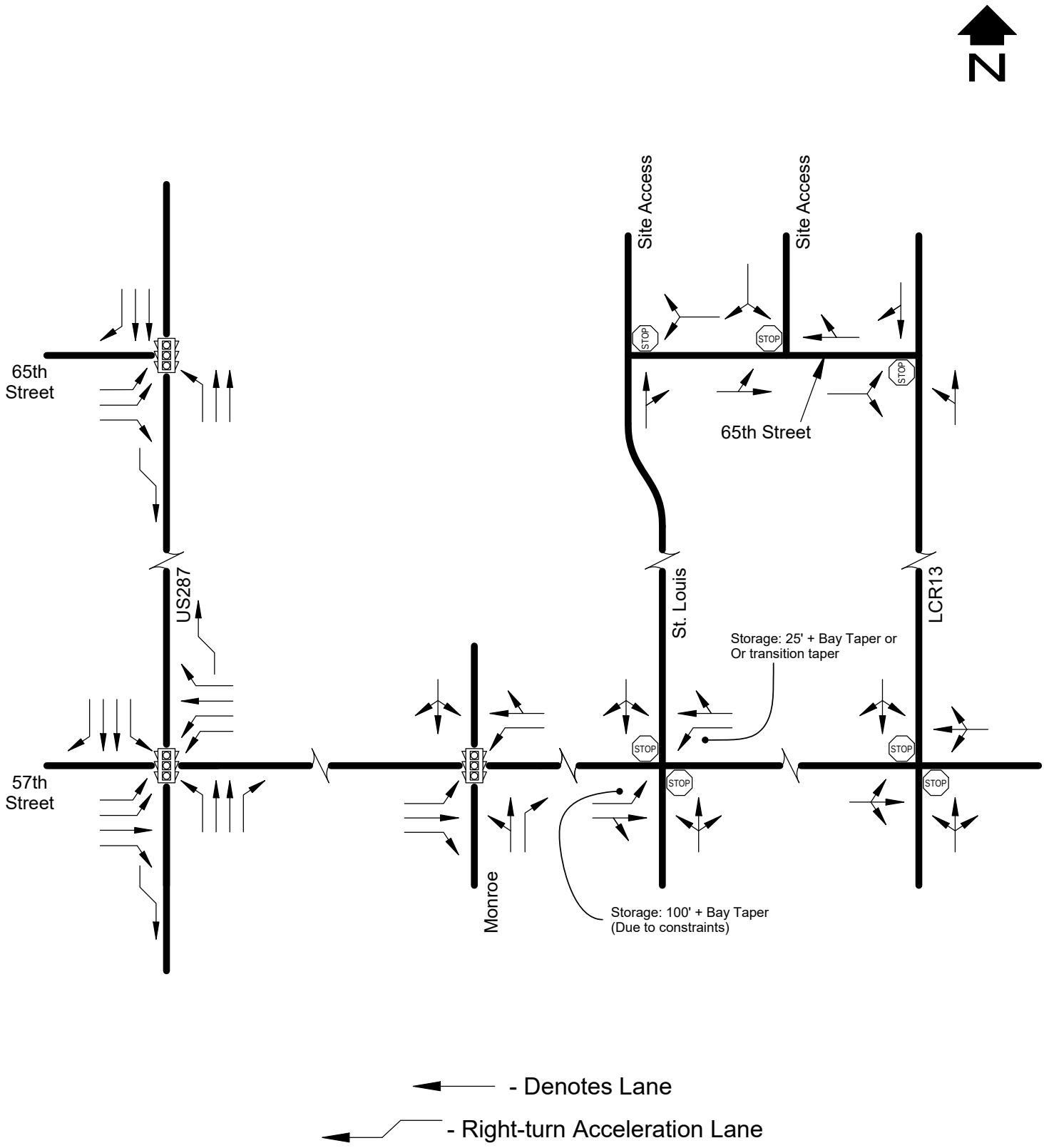
TABLE 6 Long Range (2045) Total Peak Hour Operation			
Intersection	**Movement**	**Level of Service**	
		AM	**PM**
US287/57th Street (signal)	EB LT	D	E (65.0 secs)
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	B	D
	NB T	B	C
	NB RT	A	A
	NB APPROACH	B	C
	SB LT	B	D
	SB T	C	C
	SB RT	C	C
	SB APPROACH	C	C
	OVERALL	C	D
US287/65th Street (signal)	EB LT	D	D
	EB T	D	D
	EB RT	A	A
	EB APPROACH	D	D
	WB LT	D	D
	WB T	D	D
	WB RT	A	A
	WB APPROACH	D	D
	NB LT	A	B
	NB T	B	B
	NB RT	A	B
	NB APPROACH	B	B
	SB LT	A	B
	SB T	B	B
	SB RT	A	A
	SB APPROACH	B	B
	OVERALL	B	B

Continued on next page

Continued from previous page

TABLE 6
Long Range (2045) Total Peak Hour Operation

Intersection	Movement	Level of Service	
		AM	PM
57th Street/Monroe (signal)	EB LT	A	A
	EB T	B	B
	EB RT	A	B
	EB APPROACH	B	B
	WB LT	A	A
	WB T/RT	A	B
	WB APPROACH	A	B
	NB LT/T	B	B
	NB RT	B	B
	NB APPROACH	B	B
	SB LT/T/RT	B	B
	OVERALL	B	B
57th Street/St. Louis (stop sign)	NB LT/T/RT	C	C
	SB LT/T/RT	B	C
	EB LT	A	A
	WB LT	A	A
	OVERALL	A	A
57th Street/LCR13-Koldeway (stop sign)	NB LT/T/RT	C	C
	SB LT/T	C	C
	SB RT	A	B
	SB APPROACH	B	B
	EB LT	A	A
	WB LT	A	A
	OVERALL	A	A
65th Street/Monroe (stop sign)	NB LT/RT	B	B
	WB LT/T	A	A
	OVERALL	A	A
65th Street/St. Louis (stop sign)	NB LT/T/RT	A	B
	SB LT/T/RT	A	A
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A
65th Street/Site Access (stop sign)	SB LT/RT	A	A
	EB LT/T	A	A
	OVERALL	A	A
65th Street/LCR13 (stop sign)	EB LT/RT	B	B
	NB LT/T	A	A
	OVERALL	A	A



SHORT RANGE (2027) GEOMETRY

Figure 13

Figure 14 shows the long range (2045) approach geometry at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/Monroe, 65th Street/St. Louis, 65th Street/Site Access, and 65th Street/LCR13 intersections. The long range (2045) geometry was developed based upon the operation of the key intersections and the practical geometry that could occur. In the long range (2045) future, it is assumed that US287 would have a six-lane arterial cross section.

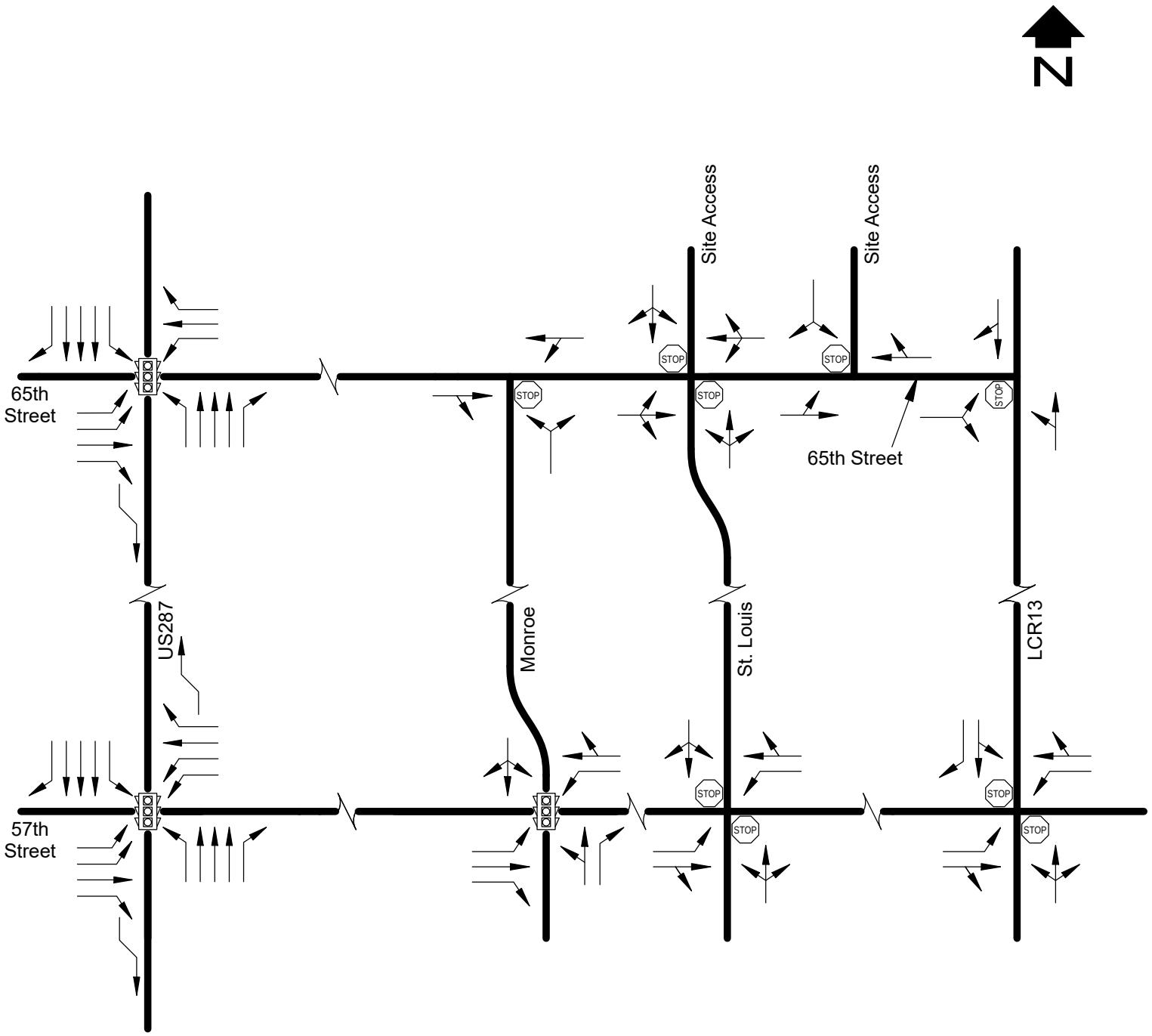
Bicycle/Pedestrian Facilities

Bicycle lanes exist as the shoulder area along US287. It is expected that as streets are built and/or improved, bicycle lanes will be incorporated into the street cross sections where appropriate.

There is a limited sidewalk system in this area. Most of the developments in the area were built when the properties were located within Larimer County and sidewalks were not required. Sidewalks will be built along the frontage of and within the Forro Residential. As shown in Appendix H, two potential pedestrian destinations within 1320 feet of the Forro Residential were identified: 1) the residential neighborhood to the south of the site and 2) Cottonwood Plains Elementary School to the north of the site. Appendix H contains a graphic depicting the pedestrian influence area and these two pedestrian destinations. A pedestrian level of service worksheet is also provided in Appendix H. This worksheet shows the level of service for each quality indicator. Since the City of Loveland has no minimum level of service criteria, this level of service could not be indicated.

Safe Routes to School

The only school within walking or bicycling distance is Cottonwood Plains Elementary School, located north of LCR30 and adjacent to Truman Drive. Since the street network in this area is not well defined and there are no sidewalks in this area, students living within the Forro Residential development will be bused to school. This was confirmed by the Thompson School District.



LONG RANGE (2045) GEOMETRY

Figure 14

IV. CONCLUSIONS/RECOMMENDATIONS

This study assessed the transportation impacts associated with the development of the Forro Residential in Loveland, Colorado. This study analyzed the transportation impacts in the short range (2027) and long range (2045) futures. As a result of these analyses, the following is concluded:

- Development of the Forro Residential is feasible from a traffic engineering standpoint. The full development trip generation resulted in 2,174 daily trip ends, 155 morning peak hour trip ends, and 207 afternoon peak hour trip ends.

- Current operation at the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, and 57th Street/LCR13-Koldeway intersections meets the City of Loveland evaluation criteria.

- None of the stop sign controlled intersections analyzed in this study will meet signal spacing criteria and will not be signalized.

- With short range (2027) background traffic and the Forro Residential site generated traffic, the US287/57th Street, US287/65th Street, 57th Street/Monroe, 57th Street/St. Louis, 57th Street/LCR13-Koldeway, 65th Street/St. Louis, 65th Street/Site Access, and 65th Street/LCR13 key intersections meet the Loveland level of service criteria in the peak hours.

- Bicycle lanes exist along US287 on the shoulders. There is very little of a sidewalk system in this area. Most of the developments in the area were built when the properties were located within Larimer County and sidewalks were not required. As streets are improved, sidewalks will be incorporated to the standard cross sections.

- Table 7 shows a summary of the recommended improvements and the responsibility for that improvement. The short range (2027) range and long range (2045) geometry is shown in Figures 13 and 14, respectively.

TABLE 7 Recommended Improvements Summary			
Improvement Description and Location	**Responsible Party**		
	Applicant	**Background**	**Master Planned**
SHORT RANGE (2027)			
On-site infrastructure	X		
Construction of 65th Street, between St. Louis Avenue and LCR13	X		
Eastbound and westbound left-turn lanes at the 57th Street/St. Louis intersection	X		
LONG RANGE (2045)			
US287 six-lane cross section		X	X
Construction of 65th Street, between US287 and St. Louis Avenue		X	X

APPENDIX A

Attachment "A"
Transportation Impact Study
Base Assumptions

Project Information				
Project Name Forro Residential				
Project Location ½ mile north of 57th Street, west of LCR13				
TIS Assumptions				
Type of Study	Full: Yes		Intermediate:	
Study Area Boundaries	North: Site (65th Street long range)		South: 57th Street	
	East: LCR13		West: US287	
Study Years	Short Range: 2027		Long Range: 2045	
Future Traffic Growth Rate	2%/year			
Study Intersections	1. All access drives		5. US287/57th Street	
	2. 57th Street/St. Louis		6. 65th Street/LCR13	
	3. 57th Street/LCR13		7. US287/65th Street (long range)	
	4. 57th Street/Monroe		Monroe/65th (Long Range)	
Time Period for Study	AM: 7:00-9:00	PM: 4:00-6:00	Sat Noon: N/A	
Trip Generation Rates (see attached)	Per ITE			
Trip Adjustment Factors	Passby: N/A		Captive Market: N/A	
Trip Distribution (see attached)	North	South	East	West
Mode Split Assumptions	N/A			
Design Vehicle Information	P.C.			
Committed Roadway Improvements	City Provide			
Other Traffic Studies	Sugar Creek			
Areas Requiring Special Study	Pedestrian safe route to Cottonwood Elementary School (discuss)			

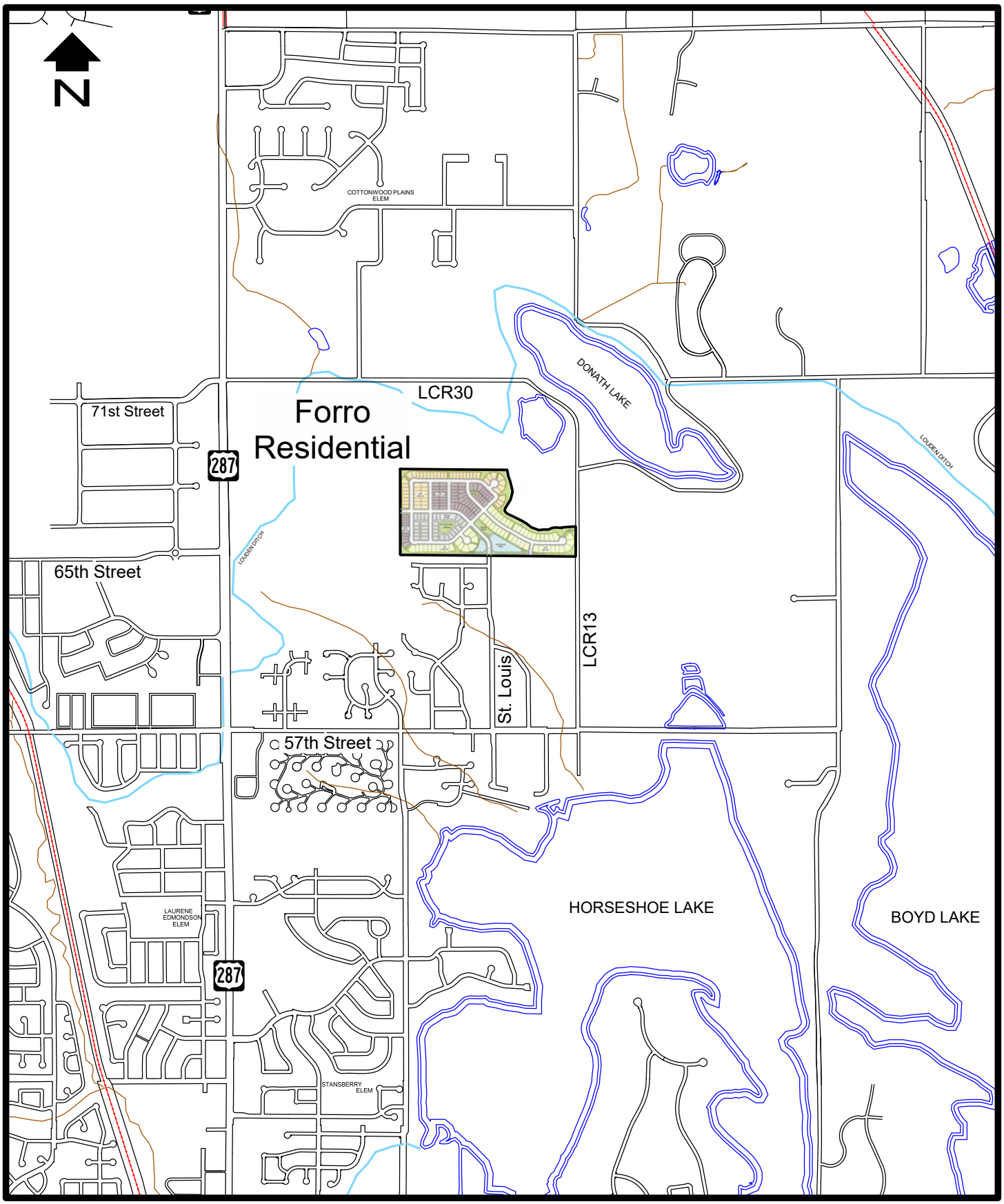
Date: October 28, 2022

Traffic Engineer: Delich Associates

Local Entity Engineer: Randy Maizland 10.28.2022

Digitally signed by Randy Maizland
DN: C=US, E=Randy.Maizland@CityofLoveland.org, O=City of Loveland, OU=Transportation Development Planning and Policy, CN=Randy Maizland
Location: Transportation Development
Reason: I have reviewed this document
Contact Info: 970.962.2618
Date: 2022.10.28 11:08:35-06'00'

2266ForroResBAF2



SCALE: 1"=2000'

SITE LOCATION

Figure 1

DELICH ASSOCIATES

N

SCALE: 1"=400'

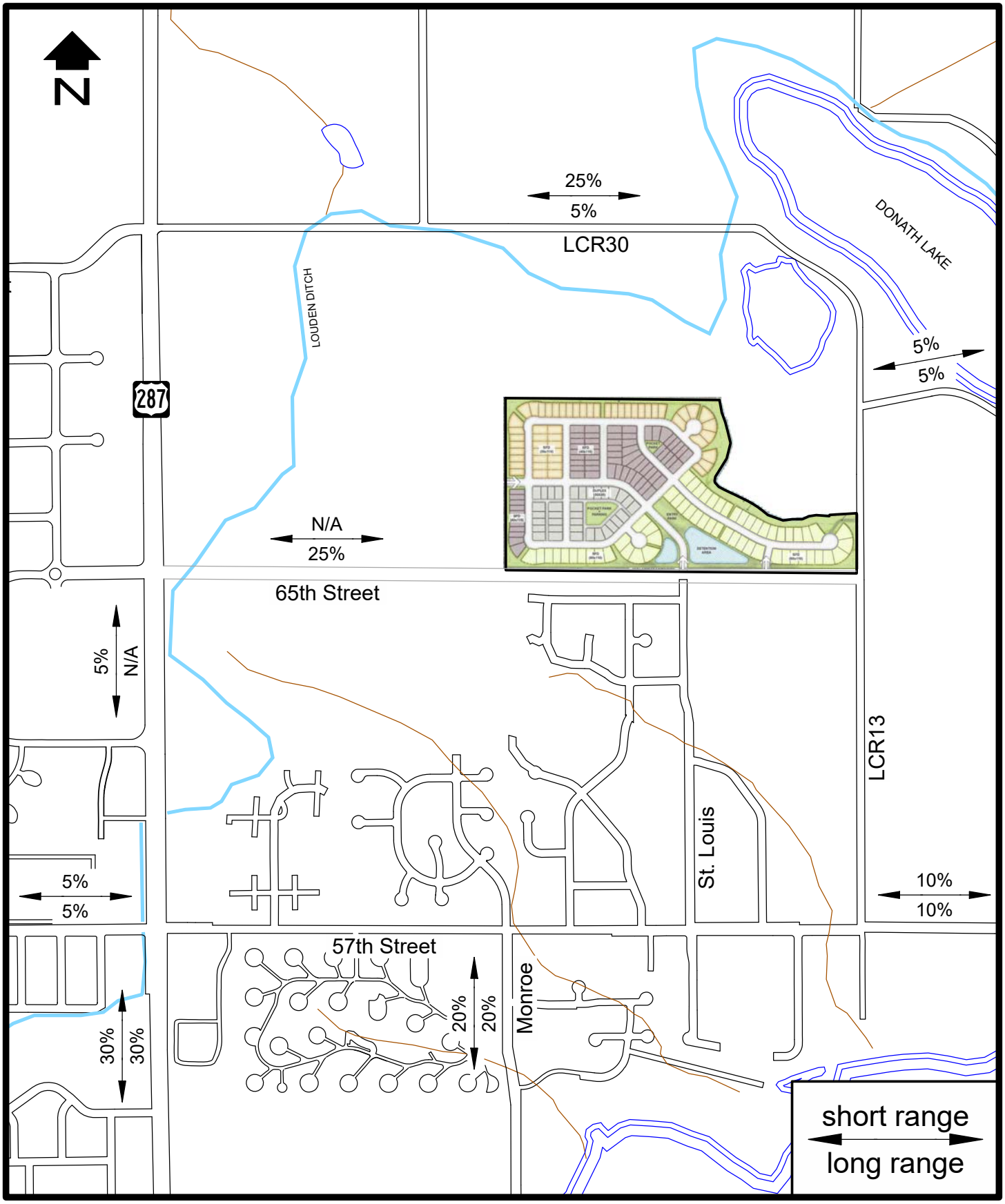
SITE PLAN

Figure 5

DELICH ASSOCIATES

TABLE 2
Trip Generation

Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
215	Single Family Attached	68 D.U.	EQ	468	EQ	9	EQ	21	EQ	21	EQ	16
210	Single Family Attached	177 D.U.	EQ	1706	EQ	33	EQ	92	EQ	107	EQ	63
Total				2174		42		113		128		79



SCALE: 1"=1000'

TRIP DISTRIBUTION

Figure 6

DELICH ASSOCIATES

APPENDIX B

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 9/14/2022 Observer: Vickie

Day: Wednesday Jurisdiction: Loveland

Intersection: US287/65th Street

R = right turn
S = straight
L = left turn

Time	Northbound: US287				Southbound: US287				Total	Eastbound: 65th Street				Westbound:				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	32	205		237		156	18	174	411	33		10	43				0	43	454
7:15	35	319		354		184	11	195	549	22		10	32				0	32	581
7:30	20	327		347		225	20	245	592	34		21	55				0	55	647
7:45	49	283		332		251	21	272	604	26		22	48				0	48	652
8:00	39	289		328		226	22	248	576	33		20	53				0	53	629
8:15	30	285		315		222	19	241	556	31		26	57				0	57	613
8:30	30	276		306		230	16	246	552	36		32	68				0	68	620
8:45	33	212		245		255	24	279	524	15		39	54				0	54	578
7:30-8:30	138	1184	0	1322	0	924	82	1006	2328	124	0	89	213	0	0	0	0	213	2541
PHF	0.7	0.91	n/a	0.95	n/a	0.92	0.93	0.92	0.96	0.91	n/a	0.86	0.93	n/a	n/a	n/a	n/a	0.93	0.97
4:00	29	275		304		331	42	373	677	40		43	83				0	83	760
4:15	43	310		353		313	37	350	703	34		43	77				0	77	780
4:30	41	303		344		347	38	385	729	36		35	71				0	71	800
4:45	35	291		326		332	40	372	698	31		38	69				0	69	767
5:00	41	293		334		336	27	363	697	65		47	112				0	112	809
5:15	21	277		298		334	43	377	675	37		42	79				0	79	754
5:30	30	257		287		337	26	363	650	41		49	90				0	90	740
5:45	28	217		245		263	18	281	526	44		31	75				0	75	601
4:15-5:15	160	1197	0	1357	0	1328	142	1470	2827	166	0	163	329	0	0	0	0	329	3156
PHF	0.93	0.97	n/a	0.96	n/a	0.96	0.89	0.95	0.97	0.64	n/a	0.87	0.73	n/a	n/a	n/a	n/a	0.73	0.98

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 6/9/2022 Observer: Vickie

Day: Thursday Jurisdiction: Loveland

Intersection: US287/57th Street

R = right turn
S = straight
L = left turn

Time	Northbound: US287				Southbound: US287				Total	Eastbound: 57th Street				Westbound: 57th Street				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	6	180	22	208	11	155	18	184	392	46	25	21	92	13	14	27	54	146	538
7:15	7	236	21	264	16	166	16	198	462	48	35	24	107	18	20	37	75	182	644
7:30	14	278	21	313	27	199	31	257	570	55	51	36	142	18	33	41	92	234	804
7:45	21	264	7	292	19	231	25	275	567	58	30	32	120	21	21	37	79	199	766
8:00	16	251	9	276	13	196	41	250	526	56	41	27	124	19	16	40	75	199	725
8:15	17	219	13	249	20	206	35	261	510	63	42	40	145	20	20	30	70	215	725
8:30	7	249	18	274	17	224	26	267	541	51	22	40	113	29	22	35	86	199	740
8:45	14	205	14	233	26	198	54	278	511	49	32	26	107	19	22	25	66	173	684
7:30-8:30	68	1012	50	1130	79	832	132	1043	2173	232	164	135	531	78	90	148	316	847	3020
PHF	0.81	0.91	0.6	0.9	0.73	0.9	0.8	0.95	0.95	0.92	0.8	0.84	0.92	0.93	0.68	0.9	0.86	0.9	0.94
4:00	23	276	18	317	47	335	75	457	774	48	29	19	96	29	32	35	96	192	966
4:15	34	285	19	338	43	330	76	449	787	55	28	24	107	20	35	31	86	193	980
4:30	29	324	25	378	48	339	76	463	841	47	35	26	108	33	28	31	92	200	1041
4:45	27	282	17	326	57	328	105	490	816	51	23	19	93	28	44	33	105	198	1014
5:00	33	292	28	353	44	314	93	451	804	61	39	20	120	29	55	37	121	241	1045
5:15	23	307	27	357	57	288	92	437	794	50	43	24	117	45	63	38	146	263	1057
5:30	33	279	28	340	39	318	110	467	807	68	51	22	141	25	32	33	90	231	1038
5:45	31	249	21	301	36	267	63	366	667	51	41	19	111	24	41	19	84	195	862
4:30-5:30	112	1205	97	1414	206	1269	366	1841	3255	209	140	89	438	135	190	139	464	902	4157
PHF	0.85	0.93	0.87	0.94	0.9	0.94	0.87	0.94	0.97	0.86	0.81	0.86	0.91	0.75	0.75	0.91	0.79	0.86	0.98

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 2/1/2022 Observer: Rollins Cosult

Day: Tuesday Jurisdiction: Loveland

Intersection: 57th Street/Monroe

R = right turn
S = straight
L = left turn

Time	Northbound: Monroe				Southbound: Monroe				Total	Eastbound: 57th Street				Westbound: 57th Street				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	19	0	21	40	0	3	4	7	47	1	28	12	41	14	15	0	29	70	117
7:15	18	0	24	42	2	2	7	11	53	1	34	17	52	11	37	1	49	101	154
7:30	31	0	22	53	2	2	10	14	67	0	49	18	67	20	46	0	66	133	200
7:45	39	1	26	66	0	3	1	4	70	2	53	19	74	19	48	2	69	143	213
8:00	19	1	23	43	0	1	8	9	52	4	61	22	87	26	54	1	81	168	220
8:15	24	0	16	40	1	0	5	6	46	0	34	20	54	18	30	0	48	102	148
8:30	29	0	23	52	0	3	2	5	57	1	35	25	61	14	26	2	42	103	160
8:45	18	1	15	34	1	1	4	6	40	2	35	20	57	11	23	0	34	91	131
7:15-8:15	107	2	95	204	4	8	26	38	242	7	197	76	280	76	185	4	265	545	787
PHF	0.69	0.5	0.91	0.77	0.5	0.67	0.65	0.68	0.86	0.44	0.81	0.86	0.8	0.73	0.86	0.5	0.82	0.81	0.89
4:00	26	2	17	45	0	3	5	8	53	5	41	38	84	32	42	3	77	161	214
4:15	26	3	19	48	0	1	1	2	50	5	36	31	72	31	51	2	84	156	206
4:30	20	3	22	45	1	3	4	8	53	5	52	36	93	23	58	1	82	175	228
4:45	18	3	15	36	2	1	1	4	40	3	32	32	67	27	47	2	76	143	183
5:00	16	1	15	32	0	1	0	1	33	3	31	34	68	16	36	0	52	120	153
5:15	19	4	20	43	1	0	1	2	45	6	21	27	54	44	53	2	99	153	198
5:30	28	2	14	44	0	1	1	2	46	1	43	32	76	27	38	0	65	141	187
5:45	16	3	12	31	1	1	1	3	34	4	24	29	57	18	35	3	56	113	147
4:00-5:00	90	11	73	174	3	8	11	22	196	18	161	137	316	113	198	8	319	635	831
PHF	0.87	0.92	0.83	0.91	0.38	0.67	0.55	0.69	0.92	0.9	0.77	0.9	0.85	0.88	0.85	0.67	0.95	0.91	0.91

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 12/6/2022 Observer: Vickie

Day: Tuesday Jurisdiction: Loveland

Intersection: 57th Street/St. Louis

R = right turn
S = straight
L = left turn

Time	Northbound: St. Louis				Southbound: St. Louis				Total	Eastbound: 57th Street				Westbound: 57th Street				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	0	0	0	0	1	0	2	3	3	0	49	0	49	0	23	1	24	73	76
7:15	2	0	2	4	8	0	3	11	15	1	76	0	77	0	42	0	42	119	134
7:30	4	0	0	4	2	0	4	6	10	0	104	2	106	0	52	0	52	158	168
7:45	2	0	1	3	2	0	8	10	13	2	91	2	95	0	60	2	62	157	170
8:00	2	0	3	5	3	0	5	8	13	5	79	0	84	0	54	0	54	138	151
8:15	3	0	0	3	0	0	3	3	6	2	60	1	63	0	47	0	47	110	116
8:30	1	0	0	1	2	0	2	4	5	0	77	1	78	0	30	2	32	110	115
8:45	0	0	0	0	4	0	5	9	9	2	59	0	61	2	31	1	34	95	104
7:15-8:15	10	0	6	16	15	0	20	35	51	8	350	4	362	0	208	2	210	572	623
PHF	0.63	n/a	0.5	0.8	0.47	n/a	0.63	0.8	0.85	0.4	0.84	0.5	0.85	n/a	0.87	0.25	0.85	0.91	0.92
4:00	0	0	1	1	3	0	3	6	7	0	45	0	45	1	95	2	98	143	150
4:15	0	0	0	0	1	0	6	7	7	6	51	0	57	1	116	3	120	177	184
4:30	1	0	2	3	0	0	3	3	6	6	64	1	71	0	104	6	110	181	187
4:45	0	0	0	0	2	0	3	5	5	6	53	0	59	2	92	2	96	155	160
5:00	1	0	1	2	3	0	2	5	7	4	57	2	63	1	104	2	107	170	177
5:15	0	0	0	0	1	0	2	3	3	3	37	0	40	0	97	3	100	140	143
5:30	1	0	0	1	0	0	4	4	5	1	46	1	48	0	72	3	75	123	128
5:45	1	0	1	2	0	0	2	2	4	8	41	1	50	3	57	2	62	112	116
4:15-5:15	2	0	3	5	6	0	14	20	25	22	225	3	250	4	416	13	433	683	708
PHF	0.5	n/a	0.38	0.42	0.5	n/a	0.58	0.71	0.89	0.92	0.88	0.38	0.88	0.5	0.9	0.54	0.9	0.94	0.95

DELICH ASSOCIATES
2272 GLEN HAVEN DRIVE
LOVELAND, CO 80538
Phone: (970) 669-2061

TABULAR SUMMARY OF VEHICLE COUNTS

Date: 11/10/2022 Observer: Vickie
Day: Thursday Jurisdiction: Loveland

Intersection: 57th Street/LCR13-Koldeway

R = right turn
S = straight
L = left turn

Time	Northbound: Koldeway				Southbound: LCR13				Total	Eastbound: 57th Street				Westbound: 57th Street				Total	Total
Begins	L	S	R	Total	L	S	R	Total	north/south	L	S	R	Total	L	S	R	Total	east/west	All
7:00	1	0	0	1	2	0	3	5	6	2	56	0	58	0	29	0	29	87	93
7:15	0	0	0	0	1	0	6	7	7	7	78	0	85	1	32	1	34	119	126
7:30	0	0	0	0	1	0	9	10	10	18	83	0	101	0	31	1	32	133	143
7:45	0	0	1	1	2	0	11	13	14	18	56	0	74	0	55	2	57	131	145
8:00	1	0	1	2	3	0	25	28	30	21	42	0	63	0	41	0	41	104	134
8:15	1	0	0	1	3	0	15	18	19	13	65	0	78	0	26	0	26	104	123
8:30	0	0	0	0	3	0	9	12	12	13	54	0	67	0	22	3	25	92	104
8:45	0	0	0	0	3	0	6	9	9	5	46	0	51	0	30	1	31	82	91
7:15-8:15	1	0	2	3	7	0	51	58	61	64	259	0	323	1	159	4	164	487	548
PHF	0.25	n/a	0.5	0.38	0.58	n/a	0.51	0.52	0.51	0.76	0.78	n/a	0.8	0.25	0.72	0.5	0.72	0.92	0.94
4:00	0	0	1	1	5	0	23	28	29	13	63	0	76	1	77	3	81	157	186
4:15	1	0	0	1	6	0	29	35	36	6	68	0	74	1	96	1	98	172	208
4:30	0	0	0	0	4	0	26	30	30	11	73	1	85	0	100	3	103	188	218
4:45	1	0	0	1	3	0	16	19	20	7	56	2	65	0	74	2	76	141	161
5:00	0	0	0	0	7	0	23	30	30	14	61	0	75	0	93	3	96	171	201
5:15	0	0	0	0	4	0	19	23	23	4	38	1	43	0	89	2	91	134	157
5:30	0	0	0	0	5	0	17	22	22	5	48	0	53	0	61	0	61	114	136
5:45	0	0	0	0	1	0	7	8	8	1	46	1	48	0	51	0	51	99	107
4:15-5:15	2	0	0	2	20	0	94	114	116	38	258	3	299	1	363	9	373	672	788
PHF	0.5	n/a	n/a	0.5	0.71	n/a	0.81	0.81	0.81	0.68	0.88	0.38	0.88	0.25	0.91	0.75	0.91	0.89	0.9

APPENDIX C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	159	127	78	96	151	75	1072	53	88	903	151
Future Volume (veh/h)	220	159	127	78	96	151	75	1072	53	88	903	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	169	0	83	102	0	80	1140	0	94	961	72
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	233		207	162		488	2010		357	2010	896
Arrive On Green	0.10	0.12	0.00	0.06	0.09	0.00	0.06	0.57	0.00	0.12	1.00	1.00
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	234	169	0	83	102	0	80	1140	0	94	961	72
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.6	8.7	0.0	2.3	5.3	0.0	1.8	20.5	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	6.6	8.7	0.0	2.3	5.3	0.0	1.8	20.5	0.0	2.1	0.0	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	339	233		207	162		488	2010		357	2010	896
V/C Ratio(X)	0.69	0.73		0.40	0.63		0.16	0.57		0.26	0.48	0.08
Avail Cap(c_a), veh/h	449	468		449	468		595	2010		464	2010	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	43.6	42.1	0.0	45.3	44.1	0.0	7.3	13.9	0.0	9.3	0.0	0.0
Incr Delay (d2), s/veh	2.9	4.3	0.0	1.2	4.0	0.0	0.2	1.2	0.0	0.4	0.8	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	2.9	4.2	0.0	1.0	2.6	0.0	0.6	7.3	0.0	0.6	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	46.4	0.0	46.5	48.1	0.0	7.5	15.1	0.0	9.7	0.8	0.2
LnGrp LOS	D	D		D	D		A	B		A	A	A
Approach Vol, veh/h		403			185			1220			1127	
Approach Delay, s/veh		46.5			47.4			14.6			1.5	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	63.6	10.0	16.4	10.0	63.6	13.8	12.6
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	11.0	30.0	12.0	24.0	11.0	30.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	4.1	22.5	4.3	10.7	3.8	2.0	8.6	7.3
Green Ext Time (p_c), s	0.1	4.1	0.1	0.6	0.1	7.0	0.2	0.4

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

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

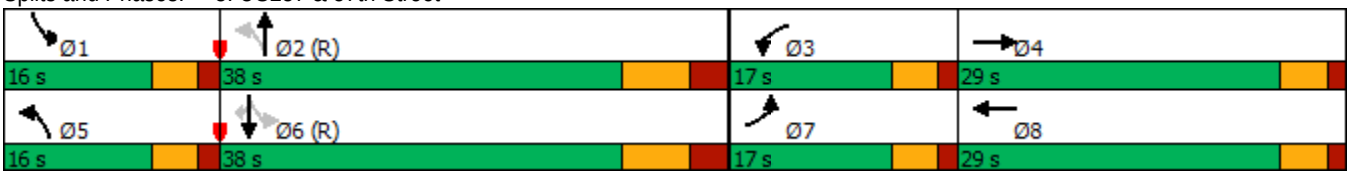
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	16	38	17	29	16	38	17	29
Maximum Split (%)	16.0%	38.0%	17.0%	29.0%	16.0%	38.0%	17.0%	29.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	0	38	55	84	0	38	55
End Time (s)	0	38	55	84	0	38	55	84
Yield/Force Off (s)	95	30	50	79	95	30	50	79
Yield/Force Off 170(s)	95	7	50	79	95	7	50	79
Local Start Time (s)	84	0	38	55	84	0	38	55
Local Yield (s)	95	30	50	79	95	30	50	79
Local Yield 170(s)	95	7	50	79	95	7	50	79

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	234	169	135	83	102	161	80	1140	56	94	961	161
v/c Ratio	0.57	0.58	0.09	0.27	0.44	0.10	0.23	0.67	0.04	0.32	0.56	0.19
Control Delay	46.9	46.5	0.1	44.5	45.5	0.1	9.9	24.1	0.0	15.5	20.1	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.9	46.5	0.1	44.5	45.5	0.1	9.9	24.1	0.0	15.5	20.1	4.5
Queue Length 50th (ft)	72	101	0	25	62	0	18	284	0	21	177	0
Queue Length 95th (ft)	111	159	0	48	106	0	43	430	0	73	250	41
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	446	465	1583	446	465	1583	417	1691	1583	352	1704	845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.36	0.09	0.19	0.22	0.10	0.19	0.67	0.04	0.27	0.56	0.19

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	217	147	92	128	182	132	112	1202	98	197	1191	346
Future Volume (veh/h)	217	147	92	128	182	132	112	1202	98	197	1191	346
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	221	150	0	131	186	0	114	1227	0	201	1215	148
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	297		237	248		262	1775		328	1854	827
Arrive On Green	0.09	0.16	0.00	0.07	0.13	0.00	0.06	0.50	0.00	0.03	0.17	0.17
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	221	150	0	131	186	0	114	1227	0	201	1215	148
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	6.2	7.3	0.0	3.7	9.6	0.0	3.0	26.4	0.0	5.2	31.9	8.0
Cycle Q Clear(g_c), s	6.2	7.3	0.0	3.7	9.6	0.0	3.0	26.4	0.0	5.2	31.9	8.0
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	326	297		237	248		262	1775		328	1854	827
V/C Ratio(X)	0.68	0.51		0.55	0.75		0.44	0.69		0.61	0.66	0.18
Avail Cap(c_a), veh/h	449	468		449	468		367	1775		393	1854	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	43.8	38.5	0.0	45.1	41.8	0.0	16.5	19.1	0.0	17.4	33.0	23.1
Incr Delay (d2), s/veh	2.5	1.3	0.0	2.0	4.5	0.0	1.1	2.2	0.0	1.7	1.5	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	2.7	3.4	0.0	1.6	4.6	0.0	1.1	10.0	0.0	2.0	15.3	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	39.8	0.0	47.1	46.2	0.0	17.6	21.4	0.0	19.1	34.5	23.5
LnGrp LOS	D	D		D	D		B	C		B	C	C
Approach Vol, veh/h		371			317			1341			1564	
Approach Delay, s/veh		43.7			46.6			21.1			31.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	56.9	10.8	19.9	10.1	59.2	13.4	17.3
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	11.0	30.0	12.0	24.0	11.0	30.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	7.2	28.4	5.7	9.3	5.0	33.9	8.2	11.6
Green Ext Time (p_c), s	0.2	1.1	0.2	0.6	0.1	0.0	0.2	0.7

Intersection Summary

HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

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

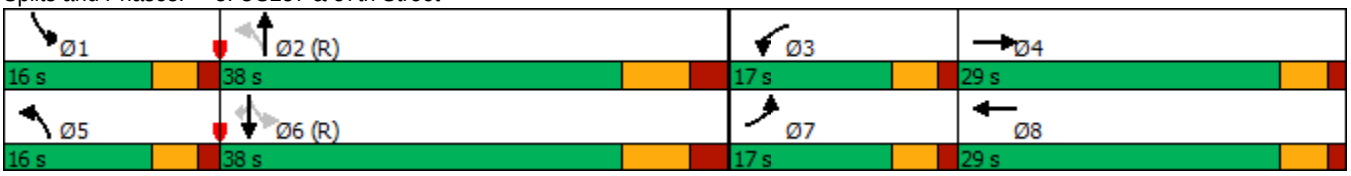
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	16	38	17	29	16	38	17	29
Maximum Split (%)	16.0%	38.0%	17.0%	29.0%	16.0%	38.0%	17.0%	29.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	27	43	81	98	27	43	81	98
End Time (s)	43	81	98	27	43	81	98	27
Yield/Force Off (s)	38	73	93	22	38	73	93	22
Yield/Force Off 170(s)	38	50	93	22	38	50	93	22
Local Start Time (s)	84	0	38	55	84	0	38	55
Local Yield (s)	95	30	50	79	95	30	50	79
Local Yield 170(s)	95	7	50	79	95	7	50	79

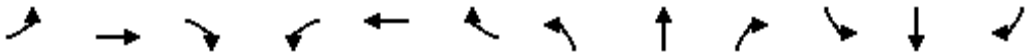
Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	221	150	94	131	186	135	114	1227	100	201	1215	353
v/c Ratio	0.54	0.45	0.06	0.38	0.62	0.09	0.45	0.86	0.06	0.67	0.79	0.40
Control Delay	46.5	40.2	0.1	44.6	47.4	0.1	17.8	37.0	0.1	28.2	23.0	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	40.2	0.1	44.6	47.4	0.1	17.8	37.0	0.1	28.2	23.0	4.0
Queue Length 50th (ft)	68	85	0	40	112	0	30	377	0	34	346	50
Queue Length 95th (ft)	106	140	0	68	172	0	70	#608	0	124	#568	77
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	446	465	1583	446	465	1583	303	1424	1583	318	1534	886
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.32	0.06	0.29	0.40	0.09	0.38	0.86	0.06	0.63	0.79	0.40

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	124	88	132	1138	911	86
Future Volume (veh/h)	124	88	132	1138	911	86
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	0	136	1173	939	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	233		545	2887	2554	
Arrive On Green	0.07	0.00	0.06	0.81	0.72	0.00
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	128	0	136	1173	939	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	3.6	0.0	1.7	9.2	10.1	0.0
Cycle Q Clear(g_c), s	3.6	0.0	1.7	9.2	10.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	233		545	2887	2554	
V/C Ratio(X)	0.55		0.25	0.41	0.37	
Avail Cap(c_a), veh/h	864		734	2887	2554	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.77	0.77	1.00	0.00
Uniform Delay (d), s/veh	45.1	0.0	3.2	2.6	5.4	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.2	0.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	0.3	1.2	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.1	0.0	3.4	3.0	5.8	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	128			1309	939	
Approach Delay, s/veh	47.1			3.0	5.8	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.2		11.8	9.4	78.9
Change Period (Y+Rc), s		8.0		6.0	4.5	8.0
Max Green Setting (Gmax), s		62.0		24.0	15.5	42.0
Max Q Clear Time (g_c+I1), s		11.2		5.6	3.7	12.1
Green Ext Time (p_c), s		9.4		0.3	0.2	6.4

Intersection Summary	
HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

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

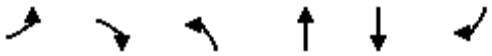
Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	70	30	20	50
Maximum Split (%)	70.0%	30.0%	20.0%	50.0%
Minimum Split (s)	26	24	9.5	26
Yellow Time (s)	5	4	3.5	5
All-Red Time (s)	3	2	1	3
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7		7
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	80	50	80	0
End Time (s)	50	80	0	50
Yield/Force Off (s)	42	74	95.5	42
Yield/Force Off 170(s)	31	63	95.5	31
Local Start Time (s)	80	50	80	0
Local Yield (s)	42	74	95.5	42
Local Yield 170(s)	31	63	95.5	31

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	60

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 18: US287 & 65th Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	128	91	136	1173	939	89
v/c Ratio	0.37	0.06	0.27	0.43	0.40	0.06
Control Delay	44.6	0.1	4.0	5.8	8.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	0.1	4.0	5.8	8.7	0.1
Queue Length 50th (ft)	40	0	11	75	129	0
Queue Length 95th (ft)	67	0	m50	294	188	0
Internal Link Dist (ft)	505			2545	694	
Turn Bay Length (ft)	275		460			470
Base Capacity (vph)	858	1583	611	2756	2346	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.06	0.22	0.43	0.40	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	157	160	160	1128	1263	137
Future Volume (veh/h)	157	160	160	1128	1263	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	0	163	1151	1289	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	271		409	2849	2513	
Arrive On Green	0.08	0.00	0.12	1.00	0.71	0.00
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	160	0	163	1151	1289	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.5	0.0	2.2	0.0	16.7	0.0
Cycle Q Clear(g_c), s	4.5	0.0	2.2	0.0	16.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	271		409	2849	2513	
V/C Ratio(X)	0.59		0.40	0.40	0.51	
Avail Cap(c_a), veh/h	864		597	2849	2513	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.58	0.58	1.00	0.00
Uniform Delay (d), s/veh	44.5	0.0	4.9	0.0	6.7	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.4	0.2	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.4	0.1	4.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.6	0.0	5.3	0.2	7.5	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	160			1314	1289	
Approach Delay, s/veh	46.6			0.9	7.5	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.2		12.8	9.4	77.7
Change Period (Y+Rc), s		8.0		6.0	4.5	8.0
Max Green Setting (Gmax), s		62.0		24.0	15.5	42.0
Max Q Clear Time (g_c+I1), s		2.0		6.5	4.2	18.7
Green Ext Time (p_c), s		9.3		0.4	0.3	9.0

Intersection Summary

HCM 6th Ctrl Delay	6.6
HCM 6th LOS	A

Notes

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

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	70	30	20	50
Maximum Split (%)	70.0%	30.0%	20.0%	50.0%
Minimum Split (s)	26	24	9.5	26
Yellow Time (s)	5	4	3.5	5
All-Red Time (s)	3	2	1	3
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7		7
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	80	50	80	0
End Time (s)	50	80	0	50
Yield/Force Off (s)	42	74	95.5	42
Yield/Force Off 170(s)	31	63	95.5	31
Local Start Time (s)	80	50	80	0
Local Yield (s)	42	74	95.5	42
Local Yield 170(s)	31	63	95.5	31

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 18: US287 & 65th Street

18: US287 & 65th Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	160	163	163	1151	1289	140
v/c Ratio	0.42	0.10	0.43	0.42	0.57	0.09
Control Delay	44.6	0.1	10.1	1.4	12.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	0.1	10.1	1.4	12.5	0.1
Queue Length 50th (ft)	50	0	13	6	215	0
Queue Length 95th (ft)	79	0	m33	8	354	0
Internal Link Dist (ft)	505			2545	694	
Turn Bay Length (ft)	275		460			470
Base Capacity (vph)	858	1583	477	2724	2250	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.10	0.34	0.42	0.57	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	224	76	76	186	4	107	2	95	4	8	26
Future Volume (veh/h)	7	224	76	76	186	4	107	2	95	4	8	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	252	1	85	209	3	120	2	10	4	9	10
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	575	458	388	579	584	8	497	6	304	163	156	141
Arrive On Green	0.04	0.24	0.24	0.12	0.32	0.29	0.16	0.19	0.19	0.16	0.19	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1839	26	1397	29	1585	143	813	735
Grp Volume(v), veh/h	8	252	1	85	0	212	122	0	10	23	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1866	1426	0	1585	1690	0	0
Q Serve(g_s), s	0.1	3.7	0.0	0.9	0.0	2.7	2.1	0.0	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	3.7	0.0	0.9	0.0	2.7	2.4	0.0	0.2	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.98		1.00	0.17		0.43
Lane Grp Cap(c), veh/h	575	458	388	579	0	592	457	0	304	406	0	0
V/C Ratio(X)	0.01	0.55	0.00	0.15	0.00	0.36	0.27	0.00	0.03	0.06	0.00	0.00
Avail Cap(c_a), veh/h	898	1197	1014	772	0	1194	1039	0	963	1090	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.0	10.3	8.9	6.3	0.0	8.2	11.6	0.0	10.3	10.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.1	0.0	0.4	0.3	0.0	0.0	0.1	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	1.1	0.0	0.2	0.0	0.7	0.6	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	11.3	8.9	6.4	0.0	8.6	11.9	0.0	10.3	10.7	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		261			297			132			23	
Approach Delay, s/veh		11.2			8.0			11.8			10.7	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	13.6		11.0	4.3	15.9		11.0				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	2.9	5.7		2.3	2.1	4.7		4.4				
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	0.9		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length		60
Control Type	Actuated-Uncoordinated	
Natural Cycle		60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	8	252	85	85	213	122	107	42
v/c Ratio	0.01	0.41	0.14	0.14	0.28	0.23	0.14	0.06
Control Delay	5.0	15.1	2.1	5.5	10.3	15.9	2.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	15.1	2.1	5.5	10.3	15.9	2.5	8.5
Queue Length 50th (ft)	1	52	0	8	26	25	0	2
Queue Length 95th (ft)	5	113	13	26	96	69	18	21
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	663	1082	972	633	1128	718	938	920
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.23	0.09	0.13	0.19	0.17	0.11	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	215	137	113	309	8	90	11	73	3	8	11
Future Volume (veh/h)	18	215	137	113	309	8	90	11	73	3	8	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	236	35	124	340	8	99	12	1	3	9	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	492	445	377	609	577	14	444	45	298	175	273	26
Arrive On Green	0.06	0.24	0.24	0.14	0.32	0.29	0.16	0.19	0.19	0.16	0.19	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1820	43	1226	238	1585	192	1453	137
Grp Volume(v), veh/h	20	236	35	124	0	348	111	0	1	13	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1863	1464	0	1585	1782	0	0
Q Serve(g_s), s	0.3	3.5	0.5	1.4	0.0	5.0	1.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	3.5	0.5	1.4	0.0	5.0	2.2	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.89		1.00	0.23		0.08
Lane Grp Cap(c), veh/h	492	445	377	609	0	591	442	0	298	418	0	0
V/C Ratio(X)	0.04	0.53	0.09	0.20	0.00	0.59	0.25	0.00	0.00	0.03	0.00	0.00
Avail Cap(c_a), veh/h	781	1171	993	758	0	1166	1030	0	943	1115	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.1	10.6	9.5	6.2	0.0	9.2	11.8	0.0	10.5	10.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.0	0.1	0.2	0.0	0.9	0.3	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.1	0.1	0.3	0.0	1.4	0.6	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	11.6	9.6	6.4	0.0	10.1	12.1	0.0	10.5	10.8	0.0	0.0
LnGrp LOS	A	B	A	A	A	B	B	A	B	B	A	A
Approach Vol, veh/h		291			472			112			13	
Approach Delay, s/veh		11.1			9.1			12.1			10.8	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	13.6		11.0	4.8	16.1		11.0				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.4	5.5		2.2	2.3	7.0		4.2				
Green Ext Time (p_c), s	0.1	1.1		0.0	0.0	1.5		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length		60
Control Type	Actuated-Uncoordinated	
Natural Cycle		60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	20	236	151	124	349	111	80	24
v/c Ratio	0.03	0.42	0.26	0.19	0.42	0.34	0.16	0.06
Control Delay	4.6	15.5	4.2	5.3	11.1	18.3	1.7	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	15.5	4.2	5.3	11.1	18.3	1.7	11.2
Queue Length 50th (ft)	2	46	0	11	44	22	0	2
Queue Length 95th (ft)	9	104	30	33	155	65	8	17
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	647	948	880	662	986	659	840	809
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.25	0.17	0.19	0.35	0.17	0.10	0.03

Intersection Summary

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	313	4	0	214	2	10	0	6	15	0	20
Future Vol, veh/h	8	313	4	0	214	2	10	0	6	15	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	340	4	0	233	2	11	0	7	16	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	235	0	0	344	0	0	605	595	342	598	596	234
Stage 1	-	-	-	-	-	-	360	360	-	234	234	-
Stage 2	-	-	-	-	-	-	245	235	-	364	362	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1332	-	-	1215	-	-	410	417	701	414	417	805
Stage 1	-	-	-	-	-	-	658	626	-	769	711	-
Stage 2	-	-	-	-	-	-	759	710	-	655	625	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1332	-	-	1215	-	-	396	414	701	408	414	805
Mov Cap-2 Maneuver	-	-	-	-	-	-	396	414	-	408	414	-
Stage 1	-	-	-	-	-	-	653	621	-	763	711	-
Stage 2	-	-	-	-	-	-	739	710	-	644	620	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	12.9	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	473	1332	-	-	1215	-	-	568
HCM Lane V/C Ratio	0.037	0.007	-	-	-	-	-	0.067
HCM Control Delay (s)	12.9	7.7	0	-	0	-	-	11.8
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	22	244	3	4	408	13	2	0	3	6	0	14
Future Vol, veh/h	22	244	3	4	408	13	2	0	3	6	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	257	3	4	429	14	2	0	3	6	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	443	0	0	260	0	0	757	756	259	750	750	436
Stage 1	-	-	-	-	-	-	305	305	-	444	444	-
Stage 2	-	-	-	-	-	-	452	451	-	306	306	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1117	-	-	1304	-	-	324	337	780	328	340	620
Stage 1	-	-	-	-	-	-	705	662	-	593	575	-
Stage 2	-	-	-	-	-	-	587	571	-	704	662	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1117	-	-	1304	-	-	309	328	780	320	330	620
Mov Cap-2 Maneuver	-	-	-	-	-	-	309	328	-	320	330	-
Stage 1	-	-	-	-	-	-	688	646	-	579	573	-
Stage 2	-	-	-	-	-	-	571	569	-	684	646	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12.5	12.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	485	1117	-	-	1304	-	-	484
HCM Lane V/C Ratio	0.011	0.021	-	-	0.003	-	-	0.043
HCM Control Delay (s)	12.5	8.3	0	-	7.8	0	-	12.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	64	270	0	1	152	4	1	0	2	7	0	51
Future Vol, veh/h	64	270	0	1	152	4	1	0	2	7	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	68	287	0	1	162	4	1	0	2	7	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	166	0	0	287	0	0	616	591	287	590	589	164
Stage 1	-	-	-	-	-	-	423	423	-	166	166	-
Stage 2	-	-	-	-	-	-	193	168	-	424	423	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1412	-	-	1275	-	-	403	420	752	419	421	881
Stage 1	-	-	-	-	-	-	609	588	-	836	761	-
Stage 2	-	-	-	-	-	-	809	759	-	608	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1412	-	-	1275	-	-	361	396	752	399	397	881
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	396	-	399	397	-
Stage 1	-	-	-	-	-	-	574	554	-	788	760	-
Stage 2	-	-	-	-	-	-	758	758	-	572	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	11.5	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	1412	-	-	1275	-	-	769
HCM Lane V/C Ratio	0.006	0.048	-	-	0.001	-	-	0.08
HCM Control Delay (s)	11.5	7.7	0	-	7.8	0	-	10.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	38	201	3	1	326	9	2	0	0	20	0	94
Future Vol, veh/h	38	201	3	1	326	9	2	0	0	20	0	94
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	223	3	1	362	10	2	0	0	22	0	104

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	372	0	0	226	0	0	730	683	225	678	679	367
Stage 1	-	-	-	-	-	-	309	309	-	369	369	-
Stage 2	-	-	-	-	-	-	421	374	-	309	310	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1186	-	-	1342	-	-	338	372	814	366	374	678
Stage 1	-	-	-	-	-	-	701	660	-	651	621	-
Stage 2	-	-	-	-	-	-	610	618	-	701	659	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1186	-	-	1342	-	-	277	356	814	354	358	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	277	356	-	354	358	-
Stage 1	-	-	-	-	-	-	672	633	-	624	620	-
Stage 2	-	-	-	-	-	-	516	617	-	672	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	18.1	12.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	277	1186	-	-	1342	-	-	584
HCM Lane V/C Ratio	0.008	0.036	-	-	0.001	-	-	0.217
HCM Control Delay (s)	18.1	8.1	0	-	7.7	0	-	12.9
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.8

UNSIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

SIGNALIZED INTERSECTIONS

Level-of-Service	Average Total Delay sec/veh
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Table 4-2
Loveland (GMA and City Limits)
Motor Vehicle LOS Standards (Intersections)

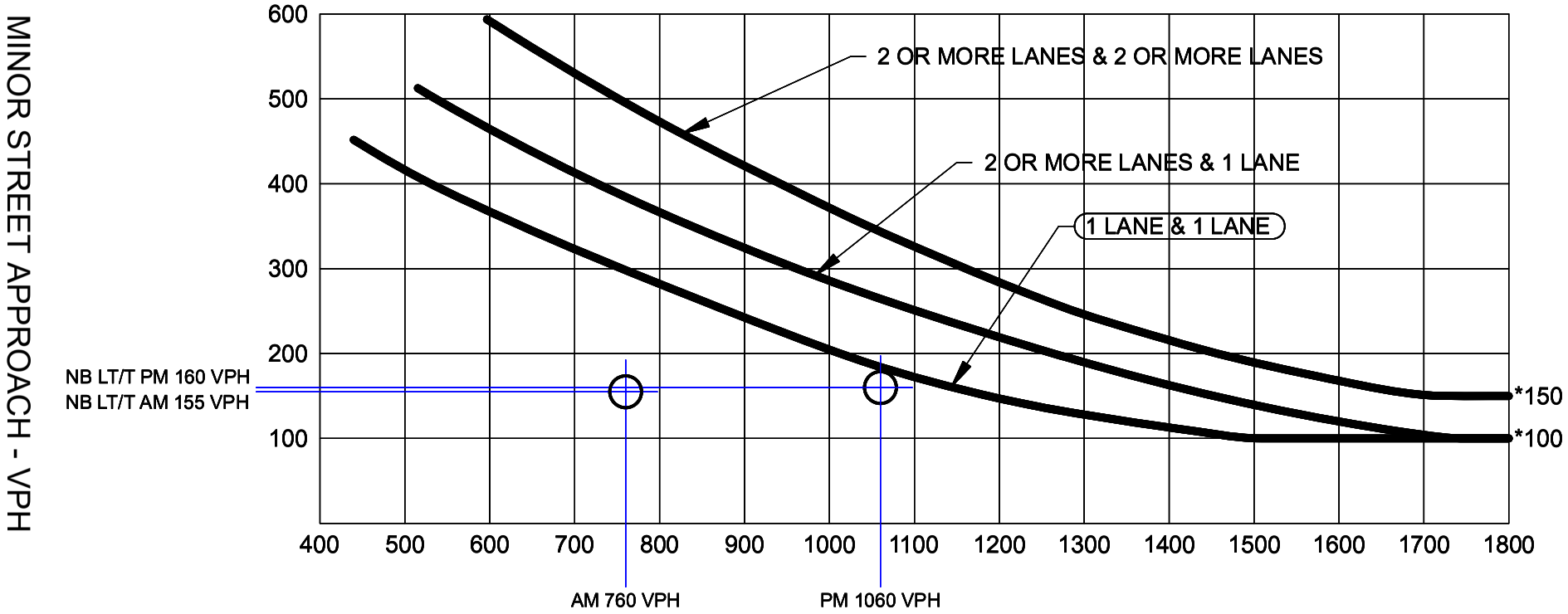
Intersection Component	Major Intersection[134]	Minor Intersection[234]	Driveway
Overall (City Limits)	LOS C	LOS C	No Limit
Overall (GMAs)	LOS D	LOS D	No Limit
Any Leg	LOS D	LOS E	No Limit
Any Movement	LOS E	LOS F	No Limit

[1] Includes all signalized and unsignalized arterial/arterial and arterial/major collector intersections
[2] Includes all unsignalized intersections (except major intersections) and high volume driveways
[3] There are no LOS standards for I-25 Interchanges
[4] On State Highways, overall LOS D is acceptable

APPENDIX D

FIGURE 4C-3. WARRANT 3, PEAK HOUR

MUTCD, 2003 EDITION, PAGE 4C-7



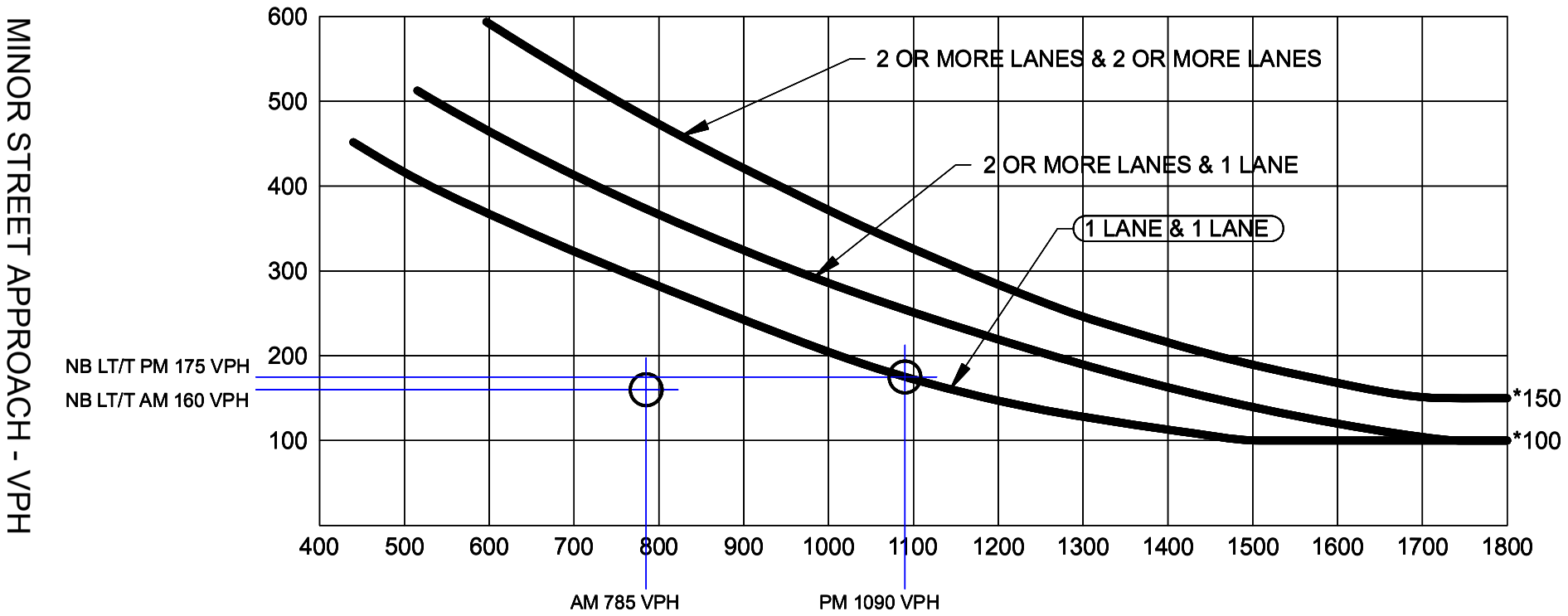
MAJOR STREET - TOTAL OF BOTH APPROACH -
VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LONG RANGE (2045) BACKGROUND PEAK HOUR WARRANT
AT 57th STREET/MONROE INTERSECTION

FIGURE 4C-3. WARRANT 3, PEAK HOUR

MUTCD, 2003 EDITION, PAGE 4C-7



MAJOR STREET - TOTAL OF BOTH APPROACH - VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LONG RANGE (2045) TOTAL PEAK HOUR WARRANT
AT 57th STREET/MONROE INTERSECTION

APPENDIX E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	208	221	111	120	168	107	1230	56	102	1050	183
Future Volume (veh/h)	299	208	221	111	120	168	107	1230	56	102	1050	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	318	221	0	118	128	0	114	1309	0	109	1117	79
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	293		223	189		426	1878		285	1878	838
Arrive On Green	0.12	0.16	0.00	0.06	0.10	0.00	0.06	0.53	0.00	0.12	1.00	1.00
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	318	221	0	118	128	0	114	1309	0	109	1117	79
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.9	11.3	0.0	3.3	6.6	0.0	2.8	27.5	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	8.9	11.3	0.0	3.3	6.6	0.0	2.8	27.5	0.0	2.7	0.0	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	416	293		223	189		426	1878		285	1878	838
V/C Ratio(X)	0.76	0.75		0.53	0.68		0.27	0.70		0.38	0.59	0.09
Avail Cap(c_a), veh/h	449	468		449	468		533	1878		392	1878	838
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.89	0.89	0.89
Uniform Delay (d), s/veh	42.6	40.3	0.0	45.3	43.4	0.0	9.0	17.6	0.0	13.1	0.0	0.0
Incr Delay (d2), s/veh	7.1	3.9	0.0	1.9	4.2	0.0	0.3	2.2	0.0	0.7	1.2	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	4.1	5.4	0.0	1.5	3.2	0.0	1.0	10.2	0.0	0.9	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	44.2	0.0	47.2	47.6	0.0	9.4	19.8	0.0	13.9	1.2	0.2
LnGrp LOS	D	D		D	D		A	B		B	A	A
Approach Vol, veh/h		539			246			1423			1305	
Approach Delay, s/veh		47.5			47.4			18.9			2.2	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	59.9	10.5	19.7	10.0	59.9	16.0	14.1
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	11.0	30.0	12.0	24.0	11.0	30.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	4.7	29.5	5.3	13.3	4.8	2.0	10.9	8.6
Green Ext Time (p_c), s	0.1	0.4	0.2	0.8	0.1	8.5	0.1	0.5

Intersection Summary

HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

Notes

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

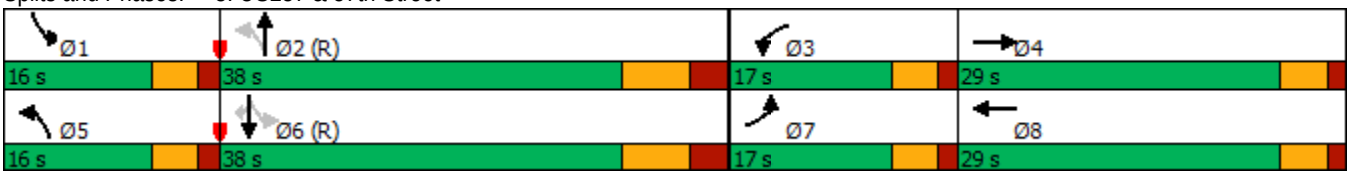
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	16	38	17	29	16	38	17	29
Maximum Split (%)	16.0%	38.0%	17.0%	29.0%	16.0%	38.0%	17.0%	29.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	0	38	55	84	0	38	55
End Time (s)	0	38	55	84	0	38	55	84
Yield/Force Off (s)	95	30	50	79	95	30	50	79
Yield/Force Off 170(s)	95	7	50	79	95	7	50	79
Local Start Time (s)	84	0	38	55	84	0	38	55
Local Yield (s)	95	30	50	79	95	30	50	79
Local Yield 170(s)	95	7	50	79	95	7	50	79

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	318	221	235	118	128	179	114	1309	60	109	1117	195
v/c Ratio	0.73	0.65	0.15	0.35	0.45	0.11	0.40	0.85	0.04	0.45	0.72	0.24
Control Delay	52.5	46.8	0.2	44.6	42.1	0.1	14.4	33.5	0.1	27.7	29.0	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	46.8	0.2	44.6	42.1	0.1	14.4	33.5	0.1	27.7	29.0	8.3
Queue Length 50th (ft)	101	132	0	37	76	0	29	379	0	38	212	0
Queue Length 95th (ft)	148	196	0	63	120	0	65	#646	0	107	#489	79
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	446	465	1583	446	465	1583	331	1546	1583	292	1542	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.48	0.15	0.26	0.28	0.11	0.34	0.85	0.04	0.37	0.72	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	181	165	162	231	150	213	1392	103	220	1405	423
Future Volume (veh/h)	288	181	165	162	231	150	213	1392	103	220	1405	423
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	294	185	0	165	236	0	217	1420	0	224	1434	154
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	366		271	299		266	1537		277	1541	687
Arrive On Green	0.11	0.20	0.00	0.08	0.16	0.00	0.10	0.43	0.00	0.03	0.14	0.14
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	294	185	0	165	236	0	217	1420	0	224	1434	154
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.2	8.8	0.0	4.6	12.1	0.0	7.1	37.8	0.0	7.2	39.9	8.6
Cycle Q Clear(g_c), s	8.2	8.8	0.0	4.6	12.1	0.0	7.1	37.8	0.0	7.2	39.9	8.6
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	395	366		271	299		266	1537		277	1541	687
V/C Ratio(X)	0.74	0.51		0.61	0.79		0.82	0.92		0.81	0.93	0.22
Avail Cap(c_a), veh/h	449	468		449	468		297	1537		307	1541	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	42.9	35.9	0.0	44.6	40.4	0.0	24.2	26.8	0.0	25.8	41.4	28.0
Incr Delay (d2), s/veh	5.8	1.1	0.0	2.2	4.8	0.0	14.8	10.8	0.0	10.3	8.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.1	0.0	2.0	5.9	0.0	3.7	16.5	0.0	3.7	20.6	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	37.0	0.0	46.8	45.2	0.0	39.0	37.6	0.0	36.2	50.3	28.5
LnGrp LOS	D	D		D	D		D	D		D	D	C
Approach Vol, veh/h		479			401			1637			1812	
Approach Delay, s/veh		44.2			45.9			37.8			46.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.3	50.3	11.8	23.6	14.2	50.4	15.4	20.0
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	11.0	30.0	12.0	24.0	11.0	30.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	9.2	39.8	6.6	10.8	9.1	41.9	10.2	14.1
Green Ext Time (p_c), s	0.1	0.0	0.2	0.7	0.1	0.0	0.2	0.8

Intersection Summary

HCM 6th Ctrl Delay	43.0
HCM 6th LOS	D

Notes

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

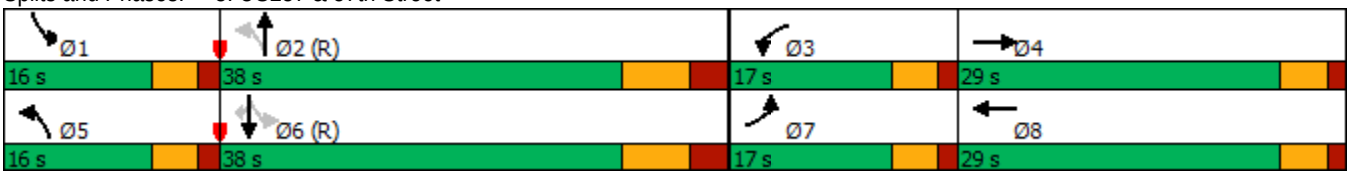
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	16	38	17	29	16	38	17	29
Maximum Split (%)	16.0%	38.0%	17.0%	29.0%	16.0%	38.0%	17.0%	29.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	27	43	81	98	27	43	81	98
End Time (s)	43	81	98	27	43	81	98	27
Yield/Force Off (s)	38	73	93	22	38	73	93	22
Yield/Force Off 170(s)	38	50	93	22	38	50	93	22
Local Start Time (s)	84	0	38	55	84	0	38	55
Local Yield (s)	95	30	50	79	95	30	50	79
Local Yield 170(s)	95	7	50	79	95	7	50	79

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	185	168	165	236	153	217	1420	105	224	1434	432
v/c Ratio	0.68	0.48	0.11	0.44	0.67	0.10	0.72	1.09	0.07	0.73	1.09	0.50
Control Delay	50.4	38.9	0.1	45.1	46.9	0.1	34.6	86.6	0.1	35.2	76.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	38.9	0.1	45.1	46.9	0.1	34.6	86.6	0.1	35.2	76.9	4.9
Queue Length 50th (ft)	93	104	0	51	141	0	78	~569	0	52	~570	63
Queue Length 95th (ft)	137	163	0	82	206	0	#199	#747	0	m#189	#749	62
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	446	465	1583	446	465	1583	312	1300	1583	316	1315	859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.40	0.11	0.37	0.51	0.10	0.70	1.09	0.07	0.71	1.09	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	104	185	1338	1083	91
Future Volume (veh/h)	131	104	185	1338	1083	91
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	0	191	1379	1116	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	242		474	2879	2542	
Arrive On Green	0.07	0.00	0.06	0.81	0.72	0.00
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	135	0	191	1379	1116	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	3.8	0.0	2.5	12.0	13.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	2.5	12.0	13.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	242		474	2879	2542	
V/C Ratio(X)	0.56		0.40	0.48	0.44	
Avail Cap(c_a), veh/h	864		661	2879	2542	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.57	0.57	1.00	0.00
Uniform Delay (d), s/veh	45.0	0.0	4.2	2.9	5.9	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.3	0.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.4	1.6	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.0	0.0	4.5	3.3	6.5	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	135			1570	1116	
Approach Delay, s/veh	47.0			3.4	6.5	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		12.0	9.5	78.5
Change Period (Y+Rc), s		8.0		6.0	4.5	8.0
Max Green Setting (Gmax), s		62.0		24.0	15.5	42.0
Max Q Clear Time (g_c+I1), s		14.0		5.8	4.5	15.0
Green Ext Time (p_c), s		12.2		0.4	0.3	7.8

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

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

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	70	30	20	50
Maximum Split (%)	70.0%	30.0%	20.0%	50.0%
Minimum Split (s)	26	24	9.5	26
Yellow Time (s)	5	4	3.5	5
All-Red Time (s)	3	2	1	3
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7		7
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	80	50	80	0
End Time (s)	50	80	0	50
Yield/Force Off (s)	42	74	95.5	42
Yield/Force Off 170(s)	31	63	95.5	31
Local Start Time (s)	80	50	80	0
Local Yield (s)	42	74	95.5	42
Local Yield 170(s)	31	63	95.5	31

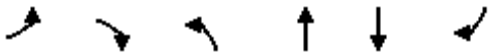
Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 18: US287 & 65th Street

18: US287 & 65th Street



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	135	107	191	1379	1116	94
v/c Ratio	0.38	0.07	0.43	0.50	0.49	0.06
Control Delay	44.6	0.1	8.8	9.1	10.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	0.1	8.8	9.1	10.6	0.1
Queue Length 50th (ft)	42	0	29	154	170	0
Queue Length 95th (ft)	70	0	m86	395	272	0
Internal Link Dist (ft)	505			2545	694	
Turn Bay Length (ft)	275		460			470
Base Capacity (vph)	858	1583	538	2750	2288	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.07	0.36	0.50	0.49	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	166	227	194	1343	1511	145
Future Volume (veh/h)	166	227	194	1343	1511	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	0	198	1370	1542	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	281		342	2839	2493	
Arrive On Green	0.08	0.00	0.12	1.00	0.70	0.00
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	169	0	198	1370	1542	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.7	0.0	2.9	0.0	22.9	0.0
Cycle Q Clear(g_c), s	4.7	0.0	2.9	0.0	22.9	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	281		342	2839	2493	
V/C Ratio(X)	0.60		0.58	0.48	0.62	
Avail Cap(c_a), veh/h	864		525	2839	2493	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.22	0.22	1.00	0.00
Uniform Delay (d), s/veh	44.4	0.0	8.9	0.0	7.9	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.3	0.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.2	0.1	6.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.4	0.0	9.2	0.1	9.0	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	169			1568	1542	
Approach Delay, s/veh	46.4			1.3	9.0	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.9		13.1	9.7	77.2
Change Period (Y+Rc), s		8.0		6.0	4.5	8.0
Max Green Setting (Gmax), s		62.0		24.0	15.5	42.0
Max Q Clear Time (g_c+I1), s		2.0		6.7	4.9	24.9
Green Ext Time (p_c), s		12.4		0.5	0.4	9.5

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Notes

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

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	70	30	20	50
Maximum Split (%)	70.0%	30.0%	20.0%	50.0%
Minimum Split (s)	26	24	9.5	26
Yellow Time (s)	5	4	3.5	5
All-Red Time (s)	3	2	1	3
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7		7
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	80	50	80	0
End Time (s)	50	80	0	50
Yield/Force Off (s)	42	74	95.5	42
Yield/Force Off 170(s)	31	63	95.5	31
Local Start Time (s)	80	50	80	0
Local Yield (s)	42	74	95.5	42
Local Yield 170(s)	31	63	95.5	31

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 18: US287 & 65th Street

18: US287 & 65th Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	169	232	198	1370	1542	148
v/c Ratio	0.44	0.15	0.61	0.50	0.71	0.09
Control Delay	44.6	0.2	27.1	1.4	16.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	0.2	27.1	1.4	16.4	0.1
Queue Length 50th (ft)	52	0	54	7	314	0
Queue Length 95th (ft)	82	0	m43	m8	512	0
Internal Link Dist (ft)	505			2545	694	
Turn Bay Length (ft)	275		460			470
Base Capacity (vph)	858	1583	407	2715	2186	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.15	0.49	0.50	0.71	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	279	95	80	212	4	121	2	100	4	8	26
Future Volume (veh/h)	7	279	95	80	212	4	121	2	100	4	8	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	313	11	90	238	3	136	2	1	4	9	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	579	518	439	560	647	8	503	4	295	166	198	89
Arrive On Green	0.04	0.28	0.28	0.12	0.35	0.32	0.16	0.19	0.19	0.16	0.19	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1843	23	1544	23	1585	181	1065	479
Grp Volume(v), veh/h	8	313	11	90	0	241	138	0	1	18	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1866	1566	0	1585	1726	0	0
Q Serve(g_s), s	0.1	4.8	0.2	1.0	0.0	3.2	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	4.8	0.2	1.0	0.0	3.2	2.4	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.99		1.00	0.22		0.28
Lane Grp Cap(c), veh/h	579	518	439	560	0	655	460	0	295	402	0	0
V/C Ratio(X)	0.01	0.60	0.03	0.16	0.00	0.37	0.30	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	882	1127	955	731	0	1125	1003	0	908	1046	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	10.4	8.7	6.2	0.0	8.0	12.4	0.0	11.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.1	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.0	0.2	0.0	0.9	0.8	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	11.6	8.8	6.3	0.0	8.4	12.7	0.0	11.0	11.4	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		332			331			139			18	
Approach Delay, s/veh		11.4			7.8			12.7			11.4	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	15.2		11.1	4.4	17.6		11.1				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.0	6.8		2.3	2.1	5.2		4.4				
Green Ext Time (p_c), s	0.0	1.4		0.0	0.0	1.0		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	8	313	107	90	242	138	112	42
v/c Ratio	0.01	0.51	0.18	0.14	0.32	0.39	0.21	0.09
Control Delay	5.1	16.5	3.3	5.8	10.9	19.0	3.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	16.5	3.3	5.8	10.9	19.0	3.3	8.9
Queue Length 50th (ft)	1	69	0	9	31	31	0	3
Queue Length 95th (ft)	6	146	21	29	112	78	20	21
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	668	953	871	625	1036	631	843	808
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.33	0.12	0.14	0.23	0.22	0.13	0.05

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	254	161	119	374	8	110	11	77	3	8	11
Future Volume (veh/h)	18	254	161	119	374	8	110	11	77	3	8	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	279	43	131	411	8	121	12	1	3	9	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	456	485	411	592	620	12	452	26	298	162	253	47
Arrive On Green	0.06	0.26	0.26	0.14	0.34	0.31	0.16	0.19	0.19	0.16	0.19	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1828	36	1312	139	1585	170	1346	253
Grp Volume(v), veh/h	20	279	43	131	0	419	133	0	1	14	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1864	1450	0	1585	1768	0	0
Q Serve(g_s), s	0.3	4.3	0.7	1.5	0.0	6.4	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	4.3	0.7	1.5	0.0	6.4	2.8	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.91		1.00	0.21		0.14
Lane Grp Cap(c), veh/h	456	485	411	592	0	632	434	0	298	410	0	0
V/C Ratio(X)	0.04	0.58	0.10	0.22	0.00	0.66	0.31	0.00	0.00	0.03	0.00	0.00
Avail Cap(c_a), veh/h	730	1117	947	724	0	1113	980	0	899	1057	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	10.8	9.4	6.2	0.0	9.4	12.6	0.0	11.1	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.1	0.2	0.0	1.2	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.4	0.2	0.3	0.0	1.9	0.8	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	11.9	9.6	6.4	0.0	10.7	13.0	0.0	11.1	11.3	0.0	0.0
LnGrp LOS	A	B	A	A	A	B	B	A	B	B	A	A
Approach Vol, veh/h		342			550			134			14	
Approach Delay, s/veh		11.4			9.6			13.0			11.3	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	14.7		11.3	4.8	17.3		11.3				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.5	6.3		2.2	2.3	8.4		4.8				
Green Ext Time (p_c), s	0.1	1.3		0.0	0.0	1.8		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	20	279	177	131	420	133	85	24
v/c Ratio	0.03	0.48	0.29	0.20	0.50	0.39	0.17	0.06
Control Delay	5.1	16.6	4.1	5.8	12.6	19.4	1.9	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	16.6	4.1	5.8	12.6	19.4	1.9	11.2
Queue Length 50th (ft)	2	58	0	12	58	28	0	2
Queue Length 95th (ft)	9	128	33	38	201	76	10	17
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	622	904	859	646	979	625	808	772
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.31	0.21	0.20	0.43	0.21	0.11	0.03

Intersection Summary

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	373	4	0	244	2	10	0	6	15	0	20
Future Vol, veh/h	8	373	4	0	244	2	10	0	6	15	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	405	4	0	265	2	11	0	7	16	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	267	0	0	409	0	0	702	692	407	695	693	266
Stage 1	-	-	-	-	-	-	425	425	-	266	266	-
Stage 2	-	-	-	-	-	-	277	267	-	429	427	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1297	-	-	1150	-	-	353	367	644	357	367	773
Stage 1	-	-	-	-	-	-	607	586	-	739	689	-
Stage 2	-	-	-	-	-	-	729	688	-	604	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1297	-	-	1150	-	-	341	364	644	351	364	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	364	-	351	364	-
Stage 1	-	-	-	-	-	-	602	581	-	732	689	-
Stage 2	-	-	-	-	-	-	708	688	-	593	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	14.1	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	414	1297	-	-	1150	-	-	510
HCM Lane V/C Ratio	0.042	0.007	-	-	-	-	-	0.075
HCM Control Delay (s)	14.1	7.8	0	-	0	-	-	12.6
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	22	287	3	4	479	13	2	0	3	6	0	14
Future Vol, veh/h	22	287	3	4	479	13	2	0	3	6	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	302	3	4	504	14	2	0	3	6	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	518	0	0	305	0	0	877	876	304	870	870	511
Stage 1	-	-	-	-	-	-	350	350	-	519	519	-
Stage 2	-	-	-	-	-	-	527	526	-	351	351	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1048	-	-	1256	-	-	269	287	736	272	290	563
Stage 1	-	-	-	-	-	-	666	633	-	540	533	-
Stage 2	-	-	-	-	-	-	535	529	-	666	632	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1048	-	-	1256	-	-	256	278	736	265	281	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	256	278	-	265	281	-
Stage 1	-	-	-	-	-	-	649	617	-	526	531	-
Stage 2	-	-	-	-	-	-	519	527	-	646	616	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	13.7	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	1048	-	-	1256	-	-	421
HCM Lane V/C Ratio	0.013	0.022	-	-	0.003	-	-	0.05
HCM Control Delay (s)	13.7	8.5	0	-	7.9	0	-	14
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.2

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	321	0	1	177	4	1	0	2	7	0	56
Future Vol, veh/h	73	321	0	1	177	4	1	0	2	7	0	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	341	0	1	188	4	1	0	2	7	0	60

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	192	0	0	341	0	0	719	691	341	690	689	190
Stage 1	-	-	-	-	-	-	497	497	-	192	192	-
Stage 2	-	-	-	-	-	-	222	194	-	498	497	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1381	-	-	1218	-	-	344	368	701	359	369	852
Stage 1	-	-	-	-	-	-	555	545	-	810	742	-
Stage 2	-	-	-	-	-	-	780	740	-	554	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1218	-	-	303	342	701	339	343	852
Mov Cap-2 Maneuver	-	-	-	-	-	-	303	342	-	339	343	-
Stage 1	-	-	-	-	-	-	516	507	-	753	741	-
Stage 2	-	-	-	-	-	-	725	739	-	514	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	12.4	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	488	1381	-	-	1218	-	-	729
HCM Lane V/C Ratio	0.007	0.056	-	-	0.001	-	-	0.092
HCM Control Delay (s)	12.4	7.8	0	-	8	0	-	10.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	43	239	3	1	385	9	2	0	0	20	0	106
Future Vol, veh/h	43	239	3	1	385	9	2	0	0	20	0	106
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	266	3	1	428	10	2	0	0	22	0	118

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	438	0	0	269	0	0	858	804	268	799	800	433
Stage 1	-	-	-	-	-	-	364	364	-	435	435	-
Stage 2	-	-	-	-	-	-	494	440	-	364	365	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1122	-	-	1295	-	-	277	316	771	304	318	623
Stage 1	-	-	-	-	-	-	655	624	-	600	580	-
Stage 2	-	-	-	-	-	-	557	578	-	655	623	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1122	-	-	1295	-	-	216	300	771	292	302	623
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	300	-	292	302	-
Stage 1	-	-	-	-	-	-	622	593	-	570	579	-
Stage 2	-	-	-	-	-	-	451	577	-	622	592	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	21.8	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	216	1122	-	-	1295	-	-	528
HCM Lane V/C Ratio	0.01	0.043	-	-	0.001	-	-	0.265
HCM Control Delay (s)	21.8	8.4	0	-	7.8	0	-	14.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.1

APPENDIX F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	335	230	245	115	130	170	120	1325	60	105	1210	230
Future Volume (veh/h)	335	230	245	115	130	170	120	1325	60	105	1210	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	235	0	117	133	0	122	1352	0	107	1235	100
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	316		219	194		304	2644		318	2635	818
Arrive On Green	0.13	0.17	0.00	0.06	0.10	0.00	0.06	0.52	0.00	0.02	0.17	0.17
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	342	235	0	117	133	0	122	1352	0	107	1235	100
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	9.6	11.9	0.0	3.3	6.9	0.0	3.1	17.4	0.0	2.7	21.8	5.3
Cycle Q Clear(g_c), s	9.6	11.9	0.0	3.3	6.9	0.0	3.1	17.4	0.0	2.7	21.8	5.3
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	445	316		219	194		304	2644		318	2635	818
V/C Ratio(X)	0.77	0.74		0.53	0.69		0.40	0.51		0.34	0.47	0.12
Avail Cap(c_a), veh/h	518	580		276	449		354	2644		353	2635	818
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	42.1	39.5	0.0	45.4	43.3	0.0	13.0	15.8	0.0	12.1	29.1	22.3
Incr Delay (d2), s/veh	5.9	3.5	0.0	2.0	4.3	0.0	0.9	0.7	0.0	0.6	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	5.7	0.0	1.4	3.4	0.0	1.1	6.1	0.0	1.0	9.9	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	43.0	0.0	47.4	47.5	0.0	13.8	16.5	0.0	12.7	29.7	22.6
LnGrp LOS	D	D		D	D		B	B		B	C	C
Approach Vol, veh/h		577			250			1474			1442	
Approach Delay, s/veh		46.0			47.5			16.3			27.9	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	58.8	10.3	20.9	10.2	58.6	16.9	14.3
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	30.0	8.0	32.0	14.0	23.0
Max Q Clear Time (g_c+I1), s	4.7	19.4	5.3	13.9	5.1	23.8	11.6	8.9
Green Ext Time (p_c), s	0.0	7.1	0.0	1.1	0.1	4.8	0.3	0.5

Intersection Summary

HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Notes

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

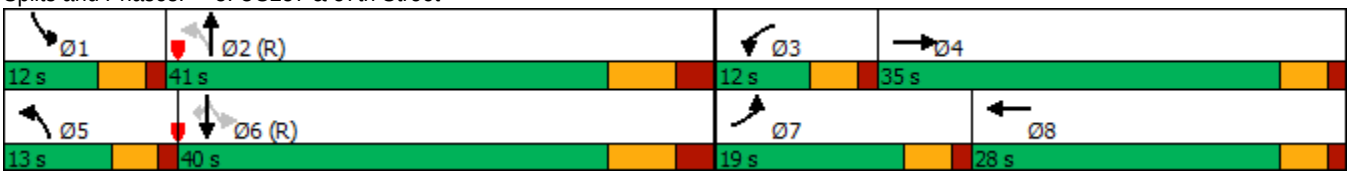
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	12	41	12	35	13	40	19	28
Maximum Split (%)	12.0%	41.0%	12.0%	35.0%	13.0%	40.0%	19.0%	28.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	30	42	83	95	30	43	83	2
End Time (s)	42	83	95	30	43	83	2	30
Yield/Force Off (s)	37	75	90	25	38	75	97	25
Yield/Force Off 170(s)	37	52	90	25	38	52	97	25
Local Start Time (s)	87	99	40	52	87	0	40	59
Local Yield (s)	94	32	47	82	95	32	54	82
Local Yield 170(s)	94	9	47	82	95	9	54	82

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	235	250	117	133	173	122	1352	61	107	1235	235
v/c Ratio	0.70	0.64	0.16	0.43	0.53	0.11	0.40	0.60	0.04	0.39	0.56	0.29
Control Delay	48.9	44.2	0.2	49.2	47.6	0.1	13.6	23.9	0.1	13.2	18.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	44.2	0.2	49.2	47.6	0.1	13.6	23.9	0.1	13.2	18.6	5.4
Queue Length 50th (ft)	107	137	0	37	80	0	31	236	0	11	232	48
Queue Length 95th (ft)	155	204	0	65	133	0	64	328	0	32	329	84
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	514	577	1583	274	447	1583	315	2237	1583	279	2214	822
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.41	0.16	0.43	0.30	0.11	0.39	0.60	0.04	0.38	0.56	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	200	180	180	255	170	230	1660	110	235	1580	480
Future Volume (veh/h)	360	200	180	180	255	170	230	1660	110	235	1580	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	367	204	0	184	260	0	235	1694	0	240	1612	218
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	391		285	321		283	2187		274	2136	663
Arrive On Green	0.12	0.21	0.00	0.08	0.17	0.00	0.10	0.43	0.00	0.06	0.28	0.28
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	367	204	0	184	260	0	235	1694	0	240	1612	218
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	10.5	9.7	0.0	5.2	13.4	0.0	7.3	28.4	0.0	7.5	28.8	10.9
Cycle Q Clear(g_c), s	10.5	9.7	0.0	5.2	13.4	0.0	7.3	28.4	0.0	7.5	28.8	10.9
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	415	391		285	321		283	2187		274	2136	663
V/C Ratio(X)	0.89	0.52		0.64	0.81		0.83	0.77		0.88	0.75	0.33
Avail Cap(c_a), veh/h	415	486		346	449		283	2187		274	2136	663
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	43.3	35.1	0.0	44.4	39.8	0.0	21.2	24.5	0.0	22.2	31.3	24.9
Incr Delay (d2), s/veh	19.8	1.1	0.0	3.0	7.5	0.0	18.3	2.8	0.0	21.2	2.0	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	5.5	4.4	0.0	2.3	6.7	0.0	4.0	10.8	0.0	4.4	12.3	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	36.2	0.0	47.4	47.3	0.0	39.5	27.2	0.0	43.4	33.3	25.9
LnGrp LOS	E	D		D	D		D	C		D	C	C
Approach Vol, veh/h		571			444			1929			2070	
Approach Delay, s/veh		53.5			47.4			28.7			33.7	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	49.8	12.3	24.9	14.0	48.8	16.0	21.2
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	8.0	35.0	9.0	25.0	9.0	34.0	11.0	23.0
Max Q Clear Time (g_c+I1), s	9.5	30.4	7.2	11.7	9.3	30.8	12.5	15.4
Green Ext Time (p_c), s	0.0	3.6	0.1	0.8	0.0	2.6	0.0	0.8

Intersection Summary

HCM 6th Ctrl Delay	35.2
HCM 6th LOS	D

Notes

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

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	13	43	14	30	14	42	16	28
Maximum Split (%)	13.0%	43.0%	14.0%	30.0%	14.0%	42.0%	16.0%	28.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	29	42	85	99	29	43	85	1
End Time (s)	42	85	99	29	43	85	1	29
Yield/Force Off (s)	37	77	94	24	38	77	96	24
Yield/Force Off 170(s)	37	54	94	24	38	54	96	24
Local Start Time (s)	86	99	42	56	86	0	42	58
Local Yield (s)	94	34	51	81	95	34	53	81
Local Yield 170(s)	94	11	51	81	95	11	53	81

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	367	204	184	184	260	173	235	1694	112	240	1612	490
v/c Ratio	0.89	0.50	0.12	0.55	0.71	0.11	0.78	0.91	0.07	0.78	0.86	0.58
Control Delay	68.6	38.2	0.1	49.7	48.5	0.1	39.9	39.1	0.1	43.9	26.8	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.6	38.2	0.1	49.7	48.5	0.1	39.9	39.1	0.1	43.9	26.8	8.2
Queue Length 50th (ft)	120	114	0	58	155	0	87	375	0	55	384	165
Queue Length 95th (ft)	#202	176	0	93	230	0	#238	#476	0	#252	#455	106
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	411	484	1583	343	447	1583	300	1857	1583	308	1881	852
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.42	0.12	0.54	0.58	0.11	0.78	0.91	0.07	0.78	0.86	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	15	130	145	30	80	225	1330	55	40	1075	120
Future Volume (veh/h)	175	15	130	145	30	80	225	1330	55	40	1075	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	15	0	148	31	0	230	1357	5	41	1097	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	112		197	161		444	3040	944	330	2838	
Arrive On Green	0.08	0.06	0.00	0.11	0.09	0.00	0.08	0.60	0.60	0.04	0.56	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	179	15	0	148	31	0	230	1357	5	41	1097	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	5.0	0.8	0.0	8.1	1.5	0.0	5.1	14.6	0.1	0.9	12.2	0.0
Cycle Q Clear(g_c), s	5.0	0.8	0.0	8.1	1.5	0.0	5.1	14.6	0.1	0.9	12.2	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	291	112		197	161		444	3040	944	330	2838	
V/C Ratio(X)	0.61	0.13		0.75	0.19		0.52	0.45	0.01	0.12	0.39	
Avail Cap(c_a), veh/h	708	411		312	355		554	3040	944	367	2838	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.2	44.5	0.0	43.1	42.4	0.0	8.5	11.1	8.2	8.8	12.6	0.0
Incr Delay (d2), s/veh	2.1	0.5	0.0	5.6	0.6	0.0	0.7	0.4	0.0	0.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.4	0.0	3.8	0.7	0.0	1.5	4.6	0.0	0.3	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	45.1	0.0	48.8	43.0	0.0	9.2	11.5	8.2	9.0	13.0	0.0
LnGrp LOS	D	D		D	D		A	B	A	A	B	
Approach Vol, veh/h		194			179			1592			1138	
Approach Delay, s/veh		46.2			47.8			11.2			12.8	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	66.5	14.6	11.0	11.9	62.6	11.9	13.6
Change Period (Y+Rc), s	4.5	8.0	4.5	6.0	4.5	8.0	4.5	6.0
Max Green Setting (Gmax), s	5.5	34.0	16.5	21.0	13.5	26.0	19.5	18.0
Max Q Clear Time (g_c+I1), s	2.9	16.6	10.1	2.8	7.1	14.2	7.0	3.5
Green Ext Time (p_c), s	0.0	8.0	0.2	0.0	0.3	5.2	0.4	0.1

Intersection Summary

HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Notes

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

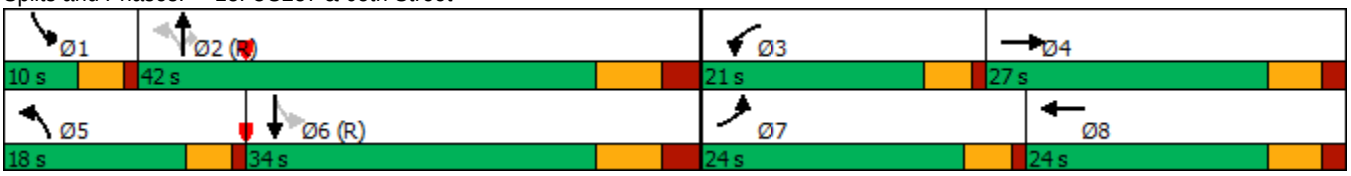
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	10	42	21	27	18	34	24	24
Maximum Split (%)	10.0%	42.0%	21.0%	27.0%	18.0%	34.0%	24.0%	24.0%
Minimum Split (s)	9.5	26	9.5	24	9.5	26	24	24
Yellow Time (s)	3.5	5	3.5	4	3.5	5	3.5	4
All-Red Time (s)	1	3	1	2	1	3	1	2
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7	7
Flash Dont Walk (s)		11		11		11	11	11
Dual Entry	No	Yes	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	82	92	34	55	82	0	34	58
End Time (s)	92	34	55	82	0	34	58	82
Yield/Force Off (s)	87.5	26	50.5	76	95.5	26	53.5	76
Yield/Force Off 170(s)	87.5	15	50.5	65	95.5	15	42.5	65
Local Start Time (s)	82	92	34	55	82	0	34	58
Local Yield (s)	87.5	26	50.5	76	95.5	26	53.5	76
Local Yield 170(s)	87.5	15	50.5	65	95.5	15	42.5	65

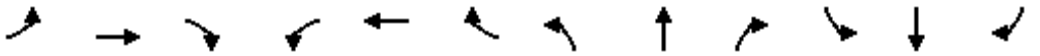
Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 18: US287 & 65th Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	15	133	148	31	82	230	1357	56	41	1097	122
v/c Ratio	0.43	0.11	0.08	0.53	0.19	0.05	0.53	0.43	0.05	0.13	0.41	0.08
Control Delay	43.8	44.5	0.1	45.1	43.8	0.1	9.9	4.8	0.4	8.0	17.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.8	44.5	0.1	45.1	43.8	0.1	9.9	4.8	0.4	8.0	17.5	0.1
Queue Length 50th (ft)	55	9	0	78	19	0	14	134	0	8	156	0
Queue Length 95th (ft)	86	29	0	148	46	0	39	175	m1	22	253	0
Internal Link Dist (ft)		505			449			2545			694	
Turn Bay Length (ft)	275		200	250		250	460		400	400		470
Base Capacity (vph)	703	409	1583	334	353	1583	476	3125	1023	315	2670	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.08	0.44	0.09	0.05	0.48	0.43	0.05	0.13	0.41	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	30	275	100	15	60	245	1410	155	90	1565	195
Future Volume (veh/h)	225	30	275	100	15	60	245	1410	155	90	1565	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	230	31	0	102	15	0	250	1439	82	92	1597	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	144		146	111		340	3038	943	304	2894	
Arrive On Green	0.10	0.08	0.00	0.08	0.06	0.00	0.06	0.40	0.40	0.06	0.57	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	230	31	0	102	15	0	250	1439	82	92	1597	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	6.4	1.6	0.0	5.6	0.8	0.0	5.4	20.9	3.2	2.1	19.7	0.0
Cycle Q Clear(g_c), s	6.4	1.6	0.0	5.6	0.8	0.0	5.4	20.9	3.2	2.1	19.7	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	345	144		146	111		340	3038	943	304	2894	
V/C Ratio(X)	0.67	0.22		0.70	0.14		0.74	0.47	0.09	0.30	0.55	
Avail Cap(c_a), veh/h	708	505		223	355		359	3038	943	320	2894	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.42	0.42	0.42	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.4	43.3	0.0	44.7	44.6	0.0	15.4	18.5	13.1	9.7	13.7	0.0
Incr Delay (d2), s/veh	2.2	0.7	0.0	5.9	0.5	0.0	3.2	0.2	0.1	0.6	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.7	0.0	2.7	0.4	0.0	2.8	8.4	1.1	0.7	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	44.1	0.0	50.6	45.2	0.0	18.5	18.7	13.2	10.3	14.4	0.0
LnGrp LOS	D	D		D	D		B	B	B	B	B	
Approach Vol, veh/h		261			117			1771			1689	
Approach Delay, s/veh		45.5			49.9			18.4			14.2	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	66.5	11.7	12.7	11.9	63.7	13.5	10.9
Change Period (Y+Rc), s	4.5	8.0	4.5	6.0	4.5	8.0	4.5	6.0
Max Green Setting (Gmax), s	5.5	34.0	11.5	26.0	8.5	31.0	19.5	18.0
Max Q Clear Time (g_c+I1), s	4.1	22.9	7.6	3.6	7.4	21.7	8.4	2.8
Green Ext Time (p_c), s	0.0	6.6	0.1	0.1	0.1	6.2	0.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

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

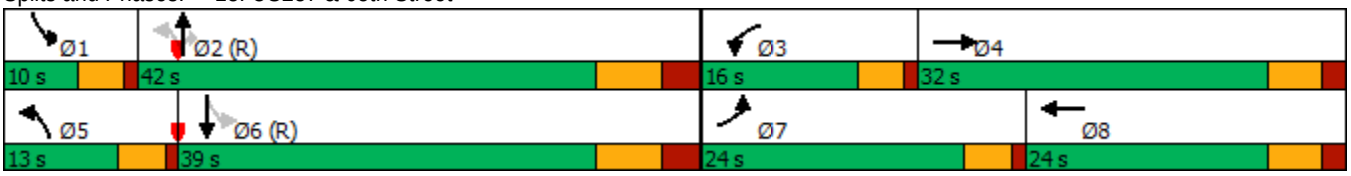
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	10	42	16	32	13	39	24	24
Maximum Split (%)	10.0%	42.0%	16.0%	32.0%	13.0%	39.0%	24.0%	24.0%
Minimum Split (s)	9.5	26	9.5	24	9.5	26	24	24
Yellow Time (s)	3.5	5	3.5	4	3.5	5	3.5	4
All-Red Time (s)	1	3	1	2	1	3	1	2
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7	7
Flash Dont Walk (s)		11		11		11	11	11
Dual Entry	No	Yes	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	97	39	55	87	0	39	63
End Time (s)	97	39	55	87	0	39	63	87
Yield/Force Off (s)	92.5	31	50.5	81	95.5	31	58.5	81
Yield/Force Off 170(s)	92.5	20	50.5	70	95.5	20	47.5	70
Local Start Time (s)	87	97	39	55	87	0	39	63
Local Yield (s)	92.5	31	50.5	81	95.5	31	58.5	81
Local Yield 170(s)	92.5	20	50.5	70	95.5	20	47.5	70

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 18: US287 & 65th Street



18: US287 & 65th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	230	31	281	102	15	61	250	1439	158	92	1597	199
v/c Ratio	0.44	0.19	0.18	0.51	0.11	0.04	0.64	0.48	0.16	0.30	0.65	0.13
Control Delay	41.0	43.9	0.2	50.8	44.4	0.1	34.0	3.4	0.8	9.7	23.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	43.9	0.2	50.8	44.4	0.1	34.0	3.4	0.8	9.7	23.5	0.2
Queue Length 50th (ft)	60	19	0	62	9	0	80	12	0	18	295	0
Queue Length 95th (ft)	105	45	0	115	29	0	m64	m220	m11	40	#424	0
Internal Link Dist (ft)		505			449			2545			694	
Turn Bay Length (ft)	275		200	250		250	460		400	400		470
Base Capacity (vph)	735	503	1583	221	353	1583	389	3005	1009	306	2452	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.06	0.18	0.46	0.04	0.04	0.64	0.48	0.16	0.30	0.65	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	305	105	100	235	5	145	10	125	5	30	30
Future Volume (veh/h)	10	305	105	100	235	5	145	10	125	5	30	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	321	22	105	247	4	153	11	24	5	32	8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	569	516	438	553	648	10	490	21	319	132	274	63
Arrive On Green	0.04	0.28	0.28	0.12	0.35	0.32	0.17	0.20	0.20	0.17	0.20	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1835	30	1439	103	1585	85	1358	312
Grp Volume(v), veh/h	11	321	22	105	0	251	164	0	24	45	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1865	1543	0	1585	1755	0	0
Q Serve(g_s), s	0.1	5.2	0.4	1.2	0.0	3.5	0.8	0.0	0.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.2	0.4	1.2	0.0	3.5	3.1	0.0	0.4	3.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.93		1.00	0.11		0.18
Lane Grp Cap(c), veh/h	569	516	438	553	0	658	466	0	319	418	0	0
V/C Ratio(X)	0.02	0.62	0.05	0.19	0.00	0.38	0.35	0.00	0.08	0.11	0.00	0.00
Avail Cap(c_a), veh/h	851	1075	911	697	0	1072	946	0	865	1019	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.1	11.0	9.2	6.5	0.0	8.4	12.7	0.0	11.3	11.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.2	0.0	0.4	0.5	0.0	0.1	0.1	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	1.7	0.1	0.3	0.0	1.0	1.0	0.0	0.1	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.1	12.2	9.3	6.6	0.0	8.8	13.1	0.0	11.4	11.6	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		354			356			188			45	
Approach Delay, s/veh		11.9			8.1			12.9			11.6	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	15.6		11.9	4.5	18.3		11.9				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.2	7.2		5.4	2.1	5.5		5.1				
Green Ext Time (p_c), s	0.1	1.4		0.1	0.0	1.1		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	10.7
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length		60
Control Type	Actuated-Uncoordinated	
Natural Cycle		60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	321	111	105	252	164	132	69
v/c Ratio	0.02	0.53	0.18	0.18	0.33	0.45	0.24	0.14
Control Delay	5.7	17.5	3.7	6.5	11.6	19.7	4.2	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.7	17.5	3.7	6.5	11.6	19.7	4.2	10.1
Queue Length 50th (ft)	1	74	0	11	35	38	0	8
Queue Length 95th (ft)	7	159	24	35	123	93	27	33
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	653	925	850	603	1012	607	824	818
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.35	0.13	0.17	0.25	0.27	0.16	0.08

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	275	185	145	425	10	120	40	90	5	25	10
Future Volume (veh/h)	20	275	185	145	425	10	120	40	90	5	25	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	289	53	153	447	10	126	42	1	5	26	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	500	424	592	641	14	415	83	307	141	293	31
Arrive On Green	0.05	0.27	0.27	0.14	0.35	0.32	0.16	0.19	0.19	0.16	0.19	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1822	41	1215	431	1585	119	1516	158
Grp Volume(v), veh/h	21	289	53	153	0	457	168	0	1	34	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1863	1646	0	1585	1794	0	0
Q Serve(g_s), s	0.3	4.7	0.9	1.8	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	4.7	0.9	1.8	0.0	7.4	3.0	0.0	0.0	3.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.75		1.00	0.15		0.09
Lane Grp Cap(c), veh/h	434	500	424	592	0	655	451	0	307	414	0	0
V/C Ratio(X)	0.05	0.58	0.12	0.26	0.00	0.70	0.37	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	692	1068	905	700	0	1064	967	0	860	1024	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	11.1	9.7	6.3	0.0	9.8	12.9	0.0	11.4	11.7	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	0.1	0.2	0.0	1.4	0.5	0.0	0.0	0.1	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	0.1	1.5	0.2	0.4	0.0	2.2	1.0	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	12.2	9.8	6.5	0.0	11.1	13.4	0.0	11.4	11.8	0.0	0.0
LnGrp LOS	A	B	A	A	A	B	B	A	B	B	A	A
Approach Vol, veh/h		363			610			169			34	
Approach Delay, s/veh		11.6			10.0			13.4			11.8	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	15.4		11.7	4.9	18.3		11.7				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.8	6.7		5.1	2.3	9.4		5.0				
Green Ext Time (p_c), s	0.1	1.4		0.1	0.0	1.9		0.6				

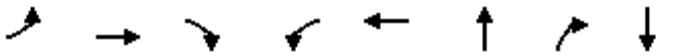
Intersection Summary	
HCM 6th Ctrl Delay	11.0
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length		60
Control Type	Actuated-Uncoordinated	
Natural Cycle		60

Splits and Phases: 5: Monroe & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	21	289	195	153	458	168	95	42
v/c Ratio	0.04	0.49	0.31	0.24	0.56	0.45	0.18	0.09
Control Delay	5.6	17.6	4.2	6.6	14.7	19.9	2.2	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.6	17.6	4.2	6.6	14.7	19.9	2.2	12.1
Queue Length 50th (ft)	2	64	0	16	70	37	0	6
Queue Length 95th (ft)	11	140	36	47	#267	93	13	26
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	601	869	842	632	950	621	782	767
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.33	0.23	0.24	0.48	0.27	0.12	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	430	5	5	285	5	10	0	5	15	0	20
Future Vol, veh/h	5	430	5	5	285	5	10	0	5	15	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	453	5	5	300	5	11	0	5	16	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	305	0	0	458	0	0	789	781	456	781	781	303
Stage 1	-	-	-	-	-	-	466	466	-	313	313	-
Stage 2	-	-	-	-	-	-	323	315	-	468	468	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1256	-	-	1103	-	-	308	326	604	312	326	737
Stage 1	-	-	-	-	-	-	577	562	-	698	657	-
Stage 2	-	-	-	-	-	-	689	656	-	575	561	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1256	-	-	1103	-	-	297	323	604	307	323	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	323	-	307	323	-
Stage 1	-	-	-	-	-	-	575	560	-	695	654	-
Stage 2	-	-	-	-	-	-	666	653	-	568	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	15.5	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	358	1256	-	-	1103	-	-	461
HCM Lane V/C Ratio	0.044	0.004	-	-	0.005	-	-	0.08
HCM Control Delay (s)	15.5	7.9	-	-	8.3	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	320	5	5	560	15	5	0	5	5	0	10
Future Vol, veh/h	20	320	5	5	560	15	5	0	5	5	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	337	5	5	589	16	5	0	5	5	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	605	0	0	342	0	0	995	997	340	991	991	597
Stage 1	-	-	-	-	-	-	382	382	-	607	607	-
Stage 2	-	-	-	-	-	-	613	615	-	384	384	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	973	-	-	1217	-	-	224	244	702	225	246	503
Stage 1	-	-	-	-	-	-	640	613	-	483	486	-
Stage 2	-	-	-	-	-	-	480	482	-	639	611	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	973	-	-	1217	-	-	215	238	702	219	240	503
Mov Cap-2 Maneuver	-	-	-	-	-	-	215	238	-	219	240	-
Stage 1	-	-	-	-	-	-	626	600	-	472	484	-
Stage 2	-	-	-	-	-	-	468	480	-	621	598	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	16.3	15.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	329	973	-	-	1217	-	-	351
HCM Lane V/C Ratio	0.032	0.022	-	-	0.004	-	-	0.045
HCM Control Delay (s)	16.3	8.8	-	-	8	-	-	15.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	340	5	5	185	10	5	0	5	15	0	95
Future Vol, veh/h	105	340	5	5	185	10	5	0	5	15	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	358	5	5	195	11	5	0	5	16	0	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	206	0	0	363	0	0	844	799	361	796	796	201
Stage 1	-	-	-	-	-	-	583	583	-	211	211	-
Stage 2	-	-	-	-	-	-	261	216	-	585	585	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1365	-	-	1196	-	-	283	319	684	305	320	840
Stage 1	-	-	-	-	-	-	498	499	-	791	728	-
Stage 2	-	-	-	-	-	-	744	724	-	497	498	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1365	-	-	1196	-	-	233	292	684	283	293	840
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	292	-	283	293	-
Stage 1	-	-	-	-	-	-	458	459	-	727	725	-
Stage 2	-	-	-	-	-	-	653	721	-	453	458	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.2	15.7	11.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	348	1365	-	-	1196	-	-	283	840
HCM Lane V/C Ratio	0.03	0.081	-	-	0.004	-	-	0.056	0.119
HCM Control Delay (s)	15.7	7.9	-	-	8	-	-	18.5	9.9
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0.2	0.4

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	240	5	5	410	20	5	0	5	30	0	160
Future Vol, veh/h	75	240	5	5	410	20	5	0	5	30	0	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	253	5	5	432	21	5	0	5	32	0	168

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	453	0	0	258	0	0	951	877	256	869	869	443
Stage 1	-	-	-	-	-	-	414	414	-	453	453	-
Stage 2	-	-	-	-	-	-	537	463	-	416	416	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1108	-	-	1307	-	-	240	287	783	272	290	615
Stage 1	-	-	-	-	-	-	616	593	-	586	570	-
Stage 2	-	-	-	-	-	-	528	564	-	614	592	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1108	-	-	1307	-	-	164	265	783	255	268	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	265	-	255	268	-
Stage 1	-	-	-	-	-	-	572	551	-	544	568	-
Stage 2	-	-	-	-	-	-	382	562	-	566	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	18.8	14.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	271	1108	-	-	1307	-	-	255	615
HCM Lane V/C Ratio	0.039	0.071	-	-	0.004	-	-	0.124	0.274
HCM Control Delay (s)	18.8	8.5	-	-	7.8	-	-	21.1	13
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.4	1.1

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	40	15	50	55	10
Future Vol, veh/h	55	40	15	50	55	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	42	16	53	58	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	100	0	164	79
Stage 1	-	-	-	-	79	-
Stage 2	-	-	-	-	85	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1493	-	827	981
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	938	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1493	-	818	981
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	944	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	839	-	-	1493	-
HCM Lane V/C Ratio	0.082	-	-	0.011	-
HCM Control Delay (s)	9.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	45	65	15	40	60	10
Future Vol, veh/h	45	65	15	40	60	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	68	16	42	63	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	115	0	155	81
Stage 1	-	-	-	-	81	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1474	-	836	979
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	949	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1474	-	827	979
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	846	-	-	1474	-
HCM Lane V/C Ratio	0.087	-	-	0.011	-
HCM Control Delay (s)	9.7	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	5	5	50	15	5
Future Vol, veh/h	60	5	5	50	15	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	5	5	53	16	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	68	0	129	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1533	-	865	998
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1533	-	862	998
Mov Cap-2 Maneuver	-	-	-	-	862	-
Stage 1	-	-	-	-	957	-
Stage 2	-	-	-	-	957	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	892	-	-	1533	-
HCM Lane V/C Ratio	0.024	-	-	0.003	-
HCM Control Delay (s)	9.1	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	40	15	5	45	10	5
Future Vol, veh/h	40	15	5	45	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	16	5	47	11	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	58	0	107	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1546	-	891	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1546	-	888	1018
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	963	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	927	-	-	1546	-
HCM Lane V/C Ratio	0.017	-	-	0.003	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	45	20	15	100	85	40
Future Vol, veh/h	45	20	15	100	85	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	21	16	105	89	42

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	247	110	131	0	-	0
Stage 1	110	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	741	943	1454	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	732	943	1454	-	-	-
Mov Cap-2 Maneuver	732	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	890	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1454	-	786	-	-
HCM Lane V/C Ratio	0.011	-	0.087	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	15	20	80	180	30
Future Vol, veh/h	30	15	20	80	180	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	16	21	84	189	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	331	205	221	0	-	0
Stage 1	205	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	664	836	1348	-	-	-
Stage 1	829	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	653	836	1348	-	-	-
Mov Cap-2 Maneuver	653	-	-	-	-	-
Stage 1	816	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1348	-	704	-	-
HCM Lane V/C Ratio	0.016	-	0.067	-	-
HCM Control Delay (s)	7.7	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX G

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	299	210	221	145	126	173	107	1230	69	104	1050	183
Future Volume (veh/h)	299	210	221	145	126	173	107	1230	69	104	1050	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	318	223	0	154	134	0	114	1309	0	111	1117	77
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	416	286		260	201		424	1855		281	1855	827
Arrive On Green	0.12	0.15	0.00	0.08	0.11	0.00	0.06	0.52	0.00	0.12	1.00	1.00
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	318	223	0	154	134	0	114	1309	0	111	1117	77
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.9	11.5	0.0	4.3	6.9	0.0	2.9	27.9	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	8.9	11.5	0.0	4.3	6.9	0.0	2.9	27.9	0.0	2.8	0.0	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	416	286		260	201		424	1855		281	1855	827
V/C Ratio(X)	0.76	0.78		0.59	0.67		0.27	0.71		0.39	0.60	0.09
Avail Cap(c_a), veh/h	449	468		449	468		531	1855		388	1855	827
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.89	0.89	0.89
Uniform Delay (d), s/veh	42.6	40.7	0.0	44.8	42.9	0.0	9.3	18.1	0.0	13.6	0.0	0.0
Incr Delay (d2), s/veh	7.1	4.6	0.0	2.2	3.8	0.0	0.3	2.3	0.0	0.8	1.3	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	4.1	5.5	0.0	1.9	3.3	0.0	1.0	10.4	0.0	0.9	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	45.4	0.0	46.9	46.7	0.0	9.7	20.4	0.0	14.4	1.3	0.2
LnGrp LOS	D	D		D	D		A	C		B	A	A
Approach Vol, veh/h		541			288			1423			1305	
Approach Delay, s/veh		47.9			46.8			19.5			2.3	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	59.2	11.5	19.3	10.0	59.2	16.0	14.7
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	11.0	30.0	12.0	24.0	11.0	30.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	4.8	29.9	6.3	13.5	4.9	2.0	10.9	8.9
Green Ext Time (p_c), s	0.1	0.1	0.2	0.8	0.1	8.5	0.1	0.5

Intersection Summary

HCM 6th Ctrl Delay		19.7	
HCM 6th LOS		B	

Notes

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

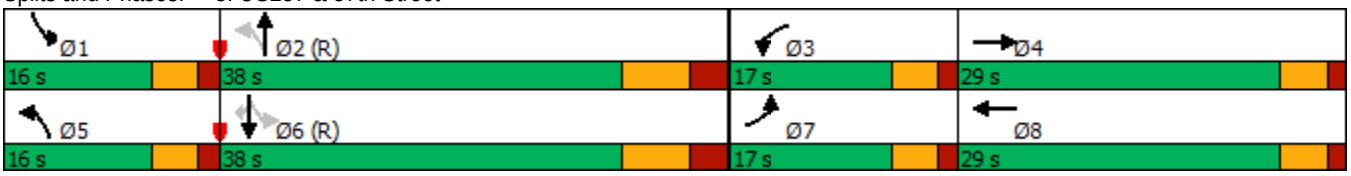
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	16	38	17	29	16	38	17	29
Maximum Split (%)	16.0%	38.0%	17.0%	29.0%	16.0%	38.0%	17.0%	29.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	84	0	38	55	84	0	38	55
End Time (s)	0	38	55	84	0	38	55	84
Yield/Force Off (s)	95	30	50	79	95	30	50	79
Yield/Force Off 170(s)	95	7	50	79	95	7	50	79
Local Start Time (s)	84	0	38	55	84	0	38	55
Local Yield (s)	95	30	50	79	95	30	50	79
Local Yield 170(s)	95	7	50	79	95	7	50	79

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	318	223	235	154	134	184	114	1309	73	111	1117	195
v/c Ratio	0.73	0.66	0.15	0.42	0.45	0.12	0.41	0.87	0.05	0.45	0.74	0.25
Control Delay	52.5	47.0	0.2	44.9	41.0	0.2	15.2	35.6	0.1	28.4	29.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	47.0	0.2	44.9	41.0	0.2	15.2	35.6	0.1	28.4	29.0	7.1
Queue Length 50th (ft)	101	133	0	47	78	0	30	388	0	39	213	0
Queue Length 95th (ft)	148	197	0	77	123	0	66	#661	0	107	#505	66
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	446	465	1583	446	465	1583	324	1510	1583	293	1507	786
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.48	0.15	0.35	0.29	0.12	0.35	0.87	0.05	0.38	0.74	0.25

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	188	165	186	235	154	213	1392	142	226	1405	423
Future Volume (veh/h)	288	188	165	186	235	154	213	1392	142	226	1405	423
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	294	192	0	190	240	0	217	1420	0	231	1434	154
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	356		296	303		266	1506		283	1532	683
Arrive On Green	0.11	0.19	0.00	0.09	0.16	0.00	0.10	0.42	0.00	0.04	0.14	0.14
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	294	192	0	190	240	0	217	1420	0	231	1434	154
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	8.2	9.3	0.0	5.3	12.3	0.0	7.2	38.3	0.0	7.9	39.9	8.6
Cycle Q Clear(g_c), s	8.2	9.3	0.0	5.3	12.3	0.0	7.2	38.3	0.0	7.9	39.9	8.6
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	395	356		296	303		266	1506		283	1532	683
V/C Ratio(X)	0.74	0.54		0.64	0.79		0.82	0.94		0.82	0.94	0.23
Avail Cap(c_a), veh/h	449	468		449	468		296	1506		301	1532	683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	42.9	36.5	0.0	44.2	40.3	0.0	24.1	27.6	0.0	27.5	41.5	28.1
Incr Delay (d2), s/veh	5.8	1.3	0.0	2.3	5.1	0.0	14.9	13.1	0.0	11.4	9.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.3	0.0	2.3	6.0	0.0	3.7	17.2	0.0	4.2	20.7	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	37.8	0.0	46.6	45.4	0.0	39.0	40.7	0.0	38.9	51.0	28.7
LnGrp LOS	D	D		D	D		D	D		D	D	C
Approach Vol, veh/h		486			430			1637			1819	
Approach Delay, s/veh		44.4			45.9			40.5			47.6	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	49.4	12.6	23.0	14.3	50.1	15.4	20.2
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	11.0	30.0	12.0	24.0	11.0	30.0	12.0	24.0
Max Q Clear Time (g_c+I1), s	9.9	40.3	7.3	11.3	9.2	41.9	10.2	14.3
Green Ext Time (p_c), s	0.1	0.0	0.2	0.7	0.1	0.0	0.2	0.8

Intersection Summary

HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

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

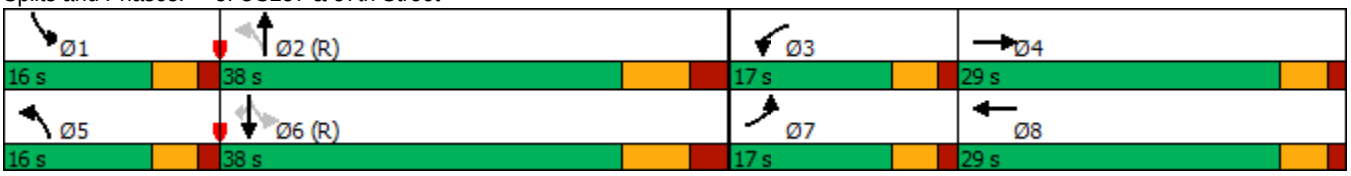
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	16	38	17	29	16	38	17	29
Maximum Split (%)	16.0%	38.0%	17.0%	29.0%	16.0%	38.0%	17.0%	29.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	27	43	81	98	27	43	81	98
End Time (s)	43	81	98	27	43	81	98	27
Yield/Force Off (s)	38	73	93	22	38	73	93	22
Yield/Force Off 170(s)	38	50	93	22	38	50	93	22
Local Start Time (s)	84	0	38	55	84	0	38	55
Local Yield (s)	95	30	50	79	95	30	50	79
Local Yield 170(s)	95	7	50	79	95	7	50	79

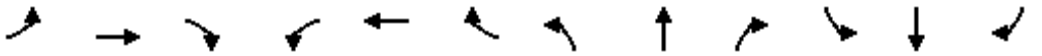
Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	95

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	294	192	168	190	240	157	217	1420	145	231	1434	432
v/c Ratio	0.68	0.51	0.11	0.48	0.68	0.10	0.72	1.10	0.09	0.75	1.09	0.50
Control Delay	50.4	39.9	0.1	45.5	47.0	0.1	34.6	90.2	0.1	36.4	78.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	39.9	0.1	45.5	47.0	0.1	34.6	90.2	0.1	36.4	78.5	4.9
Queue Length 50th (ft)	93	110	0	59	143	0	78	~578	0	56	~574	64
Queue Length 95th (ft)	137	169	0	92	209	0	#200	#747	0	m#202	#749	61
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	446	465	1583	446	465	1583	311	1289	1583	318	1310	858
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.41	0.11	0.43	0.52	0.10	0.70	1.10	0.09	0.73	1.09	0.50

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	104	185	1343	1085	91
Future Volume (veh/h)	131	104	185	1343	1085	91
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	135	0	191	1385	1119	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	242		473	2879	2542	
Arrive On Green	0.07	0.00	0.06	0.81	0.72	0.00
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	135	0	191	1385	1119	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	3.8	0.0	2.5	12.1	13.1	0.0
Cycle Q Clear(g_c), s	3.8	0.0	2.5	12.1	13.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	242		473	2879	2542	
V/C Ratio(X)	0.56		0.40	0.48	0.44	
Avail Cap(c_a), veh/h	864		660	2879	2542	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.55	0.55	1.00	0.00
Uniform Delay (d), s/veh	45.0	0.0	4.2	3.0	5.9	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.3	0.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.4	1.6	3.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.0	0.0	4.5	3.3	6.5	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	135			1576	1119	
Approach Delay, s/veh	47.0			3.4	6.5	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		12.0	9.5	78.5
Change Period (Y+Rc), s		8.0		6.0	4.5	8.0
Max Green Setting (Gmax), s		62.0		24.0	15.5	42.0
Max Q Clear Time (g_c+I1), s		14.1		5.8	4.5	15.1
Green Ext Time (p_c), s		12.3		0.4	0.3	7.8

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

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

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	70	30	20	50
Maximum Split (%)	70.0%	30.0%	20.0%	50.0%
Minimum Split (s)	26	24	9.5	26
Yellow Time (s)	5	4	3.5	5
All-Red Time (s)	3	2	1	3
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7		7
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	80	50	80	0
End Time (s)	50	80	0	50
Yield/Force Off (s)	42	74	95.5	42
Yield/Force Off 170(s)	31	63	95.5	31
Local Start Time (s)	80	50	80	0
Local Yield (s)	42	74	95.5	42
Local Yield 170(s)	31	63	95.5	31

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	65

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Splits and Phases: 18: US287 & 65th Street

18: US287 & 65th Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	135	107	191	1385	1119	94
v/c Ratio	0.38	0.07	0.44	0.50	0.48	0.06
Control Delay	44.6	0.1	9.1	9.6	10.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	0.1	9.1	9.6	10.0	0.1
Queue Length 50th (ft)	42	0	31	212	170	0
Queue Length 95th (ft)	70	0	m86	412	249	0
Internal Link Dist (ft)	505			2545	694	
Turn Bay Length (ft)	275		460			470
Base Capacity (vph)	858	1583	539	2750	2313	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.07	0.35	0.50	0.48	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	166	227	194	1347	1517	145
Future Volume (veh/h)	166	227	194	1347	1517	145
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	169	0	198	1374	1548	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	281		340	2839	2493	
Arrive On Green	0.08	0.00	0.12	1.00	0.70	0.00
Sat Flow, veh/h	3456	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	169	0	198	1374	1548	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1781	1777	1777	1585
Q Serve(g_s), s	4.7	0.0	2.9	0.0	23.0	0.0
Cycle Q Clear(g_c), s	4.7	0.0	2.9	0.0	23.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	281		340	2839	2493	
V/C Ratio(X)	0.60		0.58	0.48	0.62	
Avail Cap(c_a), veh/h	864		523	2839	2493	
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.20	0.20	1.00	0.00
Uniform Delay (d), s/veh	44.4	0.0	9.0	0.0	7.9	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.3	0.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	1.3	0.0	6.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.4	0.0	9.3	0.1	9.1	0.0
LnGrp LOS	D		A	A	A	
Approach Vol, veh/h	169			1572	1548	
Approach Delay, s/veh	46.4			1.3	9.1	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.9		13.1	9.7	77.2
Change Period (Y+Rc), s		8.0		6.0	4.5	8.0
Max Green Setting (Gmax), s		62.0		24.0	15.5	42.0
Max Q Clear Time (g_c+I1), s		2.0		6.7	4.9	25.0
Green Ext Time (p_c), s		12.5		0.5	0.4	9.5

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Notes

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

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Max	None	None	C-Max
Maximum Split (s)	70	30	20	50
Maximum Split (%)	70.0%	30.0%	20.0%	50.0%
Minimum Split (s)	26	24	9.5	26
Yellow Time (s)	5	4	3.5	5
All-Red Time (s)	3	2	1	3
Minimum Initial (s)	5	5	5	5
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)	7	7		7
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	80	50	80	0
End Time (s)	50	80	0	50
Yield/Force Off (s)	42	74	95.5	42
Yield/Force Off 170(s)	31	63	95.5	31
Local Start Time (s)	80	50	80	0
Local Yield (s)	42	74	95.5	42
Local Yield 170(s)	31	63	95.5	31

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

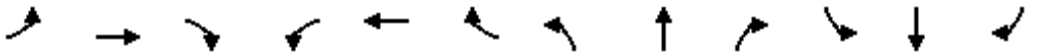
Splits and Phases: 18: US287 & 65th Street

18: US287 & 65th Street

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	169	232	198	1374	1548	148
v/c Ratio	0.44	0.15	0.61	0.51	0.71	0.09
Control Delay	44.6	0.2	27.6	1.4	16.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	0.2	27.6	1.4	16.5	0.1
Queue Length 50th (ft)	52	0	56	7	317	0
Queue Length 95th (ft)	82	0	m43	m8	515	0
Internal Link Dist (ft)	505			2545	694	
Turn Bay Length (ft)	275		460			470
Base Capacity (vph)	858	1583	406	2715	2186	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.15	0.49	0.51	0.71	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	296	95	103	257	4	121	2	108	4	8	26
Future Volume (veh/h)	7	296	95	103	257	4	121	2	108	4	8	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	8	333	10	116	289	4	136	2	1	4	9	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	558	534	452	571	685	9	488	4	283	161	189	85
Arrive On Green	0.04	0.29	0.29	0.13	0.37	0.34	0.15	0.18	0.18	0.15	0.18	0.15
Sat Flow, veh/h	1781	1870	1585	1781	1840	25	1563	23	1585	184	1062	479
Grp Volume(v), veh/h	8	333	10	116	0	293	138	0	1	18	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1866	1586	0	1585	1725	0	0
Q Serve(g_s), s	0.1	5.3	0.2	1.3	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.3	0.2	1.3	0.0	4.0	2.4	0.0	0.0	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.99		1.00	0.22		0.28
Lane Grp Cap(c), veh/h	558	534	452	571	0	695	446	0	283	386	0	0
V/C Ratio(X)	0.01	0.62	0.02	0.20	0.00	0.42	0.31	0.00	0.00	0.05	0.00	0.00
Avail Cap(c_a), veh/h	852	1094	927	710	0	1091	975	0	880	1015	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.8	10.6	8.8	6.0	0.0	8.0	13.0	0.0	11.6	11.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.2	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.0	0.3	0.0	1.1	0.8	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	11.8	8.8	6.2	0.0	8.4	13.4	0.0	11.6	11.9	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		351			409			139			18	
Approach Delay, s/veh		11.7			7.8			13.4			11.9	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	15.8		11.1	4.4	18.7		11.1				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.3	7.3		2.3	2.1	6.0		4.4				
Green Ext Time (p_c), s	0.1	1.5		0.0	0.0	1.3		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	8	333	107	116	293	138	121	42
v/c Ratio	0.01	0.56	0.18	0.19	0.35	0.42	0.24	0.10
Control Delay	5.1	18.2	3.3	5.9	11.0	20.3	3.9	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	18.2	3.3	5.9	11.0	20.3	3.9	9.0
Queue Length 50th (ft)	1	74	0	11	39	31	0	3
Queue Length 95th (ft)	6	156	21	35	136	78	23	21
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	660	888	821	608	996	588	796	755
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.38	0.13	0.19	0.29	0.23	0.15	0.06

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	306	161	134	406	8	110	11	102	3	8	11
Future Volume (veh/h)	18	306	161	134	406	8	110	11	102	3	8	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	336	46	147	446	8	121	12	1	3	9	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	459	537	455	581	678	12	434	24	278	156	235	44
Arrive On Green	0.05	0.29	0.29	0.14	0.37	0.34	0.15	0.18	0.18	0.15	0.18	0.15
Sat Flow, veh/h	1781	1870	1585	1781	1832	33	1352	134	1585	174	1340	252
Grp Volume(v), veh/h	20	336	46	147	0	454	133	0	1	14	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1864	1486	0	1585	1767	0	0
Q Serve(g_s), s	0.3	5.5	0.7	1.6	0.0	7.1	2.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	5.5	0.7	1.6	0.0	7.1	2.8	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.91		1.00	0.21		0.14
Lane Grp Cap(c), veh/h	459	537	455	581	0	691	415	0	278	385	0	0
V/C Ratio(X)	0.04	0.63	0.10	0.25	0.00	0.66	0.32	0.00	0.00	0.04	0.00	0.00
Avail Cap(c_a), veh/h	719	1069	906	693	0	1066	942	0	861	1011	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.9	10.8	9.2	6.1	0.0	9.2	13.4	0.0	11.9	12.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.1	0.2	0.0	1.1	0.4	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.7	0.2	0.3	0.0	2.0	0.8	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.0	12.0	9.3	6.3	0.0	10.2	13.9	0.0	11.9	12.2	0.0	0.0
LnGrp LOS	A	B	A	A	A	B	B	A	B	B	A	A
Approach Vol, veh/h		402			601			134			14	
Approach Delay, s/veh		11.5			9.3			13.8			12.2	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	16.0		11.2	4.9	19.0		11.2				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.6	7.5		2.2	2.3	9.1		4.8				
Green Ext Time (p_c), s	0.1	1.6		0.0	0.0	1.9		0.5				

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

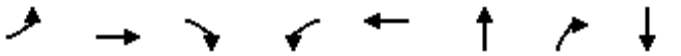
Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length		60
Control Type	Actuated-Uncoordinated	
Natural Cycle		60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	20	336	177	147	455	133	112	24
v/c Ratio	0.03	0.54	0.27	0.24	0.53	0.40	0.22	0.06
Control Delay	5.0	17.4	4.0	6.0	13.2	20.2	3.5	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.0	17.4	4.0	6.0	13.2	20.2	3.5	11.5
Queue Length 50th (ft)	2	74	0	15	67	31	0	3
Queue Length 95th (ft)	9	157	33	42	#230	76	21	17
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	620	874	836	618	989	604	786	747
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.38	0.21	0.24	0.46	0.22	0.14	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	373	4	0	245	3	10	0	6	17	0	87
Future Vol, veh/h	33	373	4	0	245	3	10	0	6	17	0	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	405	4	0	266	3	11	0	7	18	0	95

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	269	0	0	409	0	0	794	748	407	751	749	268
Stage 1	-	-	-	-	-	-	479	479	-	268	268	-
Stage 2	-	-	-	-	-	-	315	269	-	483	481	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1295	-	-	1150	-	-	306	341	644	327	341	771
Stage 1	-	-	-	-	-	-	568	555	-	738	687	-
Stage 2	-	-	-	-	-	-	696	687	-	565	554	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1295	-	-	1150	-	-	263	331	644	317	331	771
Mov Cap-2 Maneuver	-	-	-	-	-	-	263	331	-	317	331	-
Stage 1	-	-	-	-	-	-	552	539	-	717	687	-
Stage 2	-	-	-	-	-	-	611	687	-	544	538	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	16.2	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	338	1295	-	-	1150	-	-	625
HCM Lane V/C Ratio	0.051	0.028	-	-	-	-	-	0.181
HCM Control Delay (s)	16.2	7.9	-	-	0	-	-	12
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.7

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	98	288	3	4	480	15	2	0	3	7	0	60
Future Vol, veh/h	98	288	3	4	480	15	2	0	3	7	0	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	103	303	3	4	505	16	2	0	3	7	0	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	521	0	0	306	0	0	1064	1040	305	1033	1033	513
Stage 1	-	-	-	-	-	-	511	511	-	521	521	-
Stage 2	-	-	-	-	-	-	553	529	-	512	512	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1045	-	-	1255	-	-	201	230	735	211	232	561
Stage 1	-	-	-	-	-	-	545	537	-	539	532	-
Stage 2	-	-	-	-	-	-	517	527	-	545	536	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1045	-	-	1255	-	-	164	207	735	194	208	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	207	-	194	208	-
Stage 1	-	-	-	-	-	-	491	484	-	486	530	-
Stage 2	-	-	-	-	-	-	457	525	-	489	483	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0.1	16.9	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	307	1045	-	-	1255	-	-	468
HCM Lane V/C Ratio	0.017	0.099	-	-	0.003	-	-	0.151
HCM Control Delay (s)	16.9	8.8	-	-	7.9	-	-	14.1
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0.5

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	73	323	0	1	178	7	1	0	2	16	0	57
Future Vol, veh/h	73	323	0	1	178	7	1	0	2	16	0	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	344	0	1	189	7	1	0	2	17	0	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	344	0	0	725	698	344	696	695	193
Stage 1	-	-	-	-	-	-	500	500	-	195	195	-
Stage 2	-	-	-	-	-	-	225	198	-	501	500	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1377	-	-	1215	-	-	340	364	699	356	366	849
Stage 1	-	-	-	-	-	-	553	543	-	807	739	-
Stage 2	-	-	-	-	-	-	778	737	-	552	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1377	-	-	1215	-	-	299	338	699	336	340	849
Mov Cap-2 Maneuver	-	-	-	-	-	-	299	338	-	336	340	-
Stage 1	-	-	-	-	-	-	514	505	-	751	738	-
Stage 2	-	-	-	-	-	-	722	736	-	512	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	12.5	11.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	483	1377	-	-	1215	-	-	636
HCM Lane V/C Ratio	0.007	0.056	-	-	0.001	-	-	0.122
HCM Control Delay (s)	12.5	7.8	0	-	8	0	-	11.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.4

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	44	240	3	1	387	20	2	0	0	27	0	107
Future Vol, veh/h	44	240	3	1	387	20	2	0	0	27	0	107
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	267	3	1	430	22	2	0	0	30	0	119

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	452	0	0	270	0	0	870	821	269	810	811	441
Stage 1	-	-	-	-	-	-	367	367	-	443	443	-
Stage 2	-	-	-	-	-	-	503	454	-	367	368	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1109	-	-	1293	-	-	272	309	770	298	313	616
Stage 1	-	-	-	-	-	-	653	622	-	594	576	-
Stage 2	-	-	-	-	-	-	551	569	-	653	621	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1109	-	-	1293	-	-	211	293	770	286	296	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	293	-	286	296	-
Stage 1	-	-	-	-	-	-	619	590	-	563	575	-
Stage 2	-	-	-	-	-	-	444	568	-	619	589	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	0	22.2	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	211	1109	-	-	1293	-	-	500
HCM Lane V/C Ratio	0.011	0.044	-	-	0.001	-	-	0.298
HCM Control Delay (s)	22.2	8.4	0	-	7.8	0	-	15.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.2

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	8	22	4	23	59
Future Vol, veh/h	10	8	22	4	23	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	9	26	5	27	69

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	152	29	0	0	31	0
Stage 1	29	-	-	-	-	-
Stage 2	123	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	840	1046	-	-	1582	-
Stage 1	994	-	-	-	-	-
Stage 2	902	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	825	1046	-	-	1582	-
Mov Cap-2 Maneuver	825	-	-	-	-	-
Stage 1	994	-	-	-	-	-
Stage 2	886	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	2.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	910	1582	-
HCM Lane V/C Ratio	-	-	0.023	0.017	-
HCM Control Delay (s)	-	-	9.1	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	26	66	12	17	41
Future Vol, veh/h	6	26	66	12	17	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	31	78	14	20	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	173	85	0	0	92	0
Stage 1	85	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	817	974	-	-	1503	-
Stage 1	938	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	806	974	-	-	1503	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	922	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	2.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	937	1503	-
HCM Lane V/C Ratio	-	-	0.04	0.013	-
HCM Control Delay (s)	-	-	9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection						
Int Delay, s/veh	4.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	23	8	8	21	10
Future Vol, veh/h	4	23	8	8	21	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	27	9	9	25	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	18	0	-	0	51	14
Stage 1	-	-	-	-	14	-
Stage 2	-	-	-	-	37	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1599	-	-	-	958	1066
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	985	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1599	-	-	-	955	1066
Mov Cap-2 Maneuver	-	-	-	-	955	-
Stage 1	-	-	-	-	1006	-
Stage 2	-	-	-	-	985	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1599	-	-	-	988
HCM Lane V/C Ratio	0.003	-	-	-	0.037
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	17	26	24	15	6
Future Vol, veh/h	12	17	26	24	15	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	20	31	28	18	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	93	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	48	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1545	-	-	-	907	1025
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1545	-	-	-	899	1025
Mov Cap-2 Maneuver	-	-	-	-	899	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	974	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1545	-	-	-	932
HCM Lane V/C Ratio	0.009	-	-	-	0.027
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	10	3	77	63	13
Future Vol, veh/h	34	10	3	77	63	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	12	4	91	74	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	181	82	89	0	-	0
Stage 1	82	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	808	978	1506	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	806	978	1506	-	-	-
Mov Cap-2 Maneuver	806	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1506	-	840	-	-
HCM Lane V/C Ratio	0.002	-	0.062	-	-
HCM Control Delay (s)	7.4	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	8	12	51	127	38
Future Vol, veh/h	24	8	12	51	127	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	9	14	60	149	45

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	172	194	0	-	0
Stage 1	172	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	729	872	1379	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	721	872	1379	-	-	-
Mov Cap-2 Maneuver	721	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1379	-	754	-	-
HCM Lane V/C Ratio	0.01	-	0.05	-	-
HCM Control Delay (s)	7.6	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

APPENDIX H

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	335	230	245	125	135	170	120	1335	65	105	1230	235
Future Volume (veh/h)	335	230	245	125	135	170	120	1335	65	105	1230	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	342	235	0	128	138	0	122	1362	0	107	1255	100
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	315		229	199		299	2629		314	2620	813
Arrive On Green	0.13	0.17	0.00	0.07	0.11	0.00	0.06	0.51	0.00	0.02	0.17	0.17
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	342	235	0	128	138	0	122	1362	0	107	1255	100
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	9.6	11.9	0.0	3.6	7.1	0.0	3.1	17.6	0.0	2.7	22.2	5.4
Cycle Q Clear(g_c), s	9.6	11.9	0.0	3.6	7.1	0.0	3.1	17.6	0.0	2.7	22.2	5.4
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	445	315		229	199		299	2629		314	2620	813
V/C Ratio(X)	0.77	0.74		0.56	0.69		0.41	0.52		0.34	0.48	0.12
Avail Cap(c_a), veh/h	518	580		276	449		349	2629		350	2620	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	42.1	39.5	0.0	45.3	43.1	0.0	13.2	16.0	0.0	12.3	29.5	22.4
Incr Delay (d2), s/veh	5.9	3.5	0.0	2.1	4.3	0.0	0.9	0.7	0.0	0.6	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	5.7	0.0	1.6	3.5	0.0	1.1	6.2	0.0	1.0	10.1	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	43.0	0.0	47.4	47.4	0.0	14.1	16.8	0.0	12.9	30.0	22.7
LnGrp LOS	D	D		D	D		B	B		B	C	C
Approach Vol, veh/h		577			266			1484			1462	
Approach Delay, s/veh		46.0			47.4			16.6			28.3	
Approach LOS		D			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	58.5	10.6	20.9	10.2	58.3	16.9	14.6
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	7.0	33.0	7.0	30.0	8.0	32.0	14.0	23.0
Max Q Clear Time (g_c+I1), s	4.7	19.6	5.6	13.9	5.1	24.2	11.6	9.1
Green Ext Time (p_c), s	0.0	7.1	0.0	1.1	0.1	4.6	0.3	0.5

Intersection Summary

HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

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

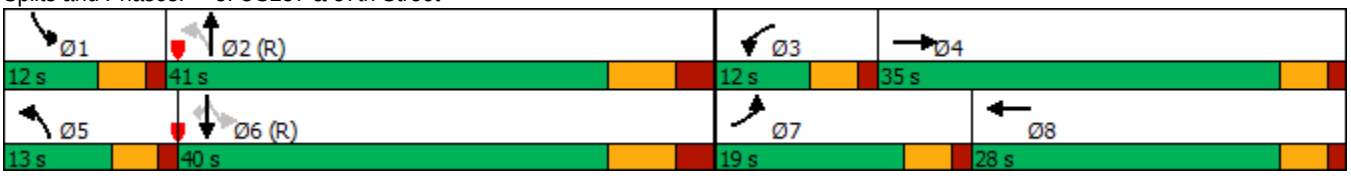
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	12	41	12	35	13	40	19	28
Maximum Split (%)	12.0%	41.0%	12.0%	35.0%	13.0%	40.0%	19.0%	28.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	30	42	83	95	30	43	83	2
End Time (s)	42	83	95	30	43	83	2	30
Yield/Force Off (s)	37	75	90	25	38	75	97	25
Yield/Force Off 170(s)	37	52	90	25	38	52	97	25
Local Start Time (s)	87	99	40	52	87	0	40	59
Local Yield (s)	94	32	47	82	95	32	54	82
Local Yield 170(s)	94	9	47	82	95	9	54	82

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	342	235	250	128	138	173	122	1362	66	107	1255	240
v/c Ratio	0.70	0.63	0.16	0.47	0.54	0.11	0.41	0.61	0.04	0.39	0.57	0.29
Control Delay	48.9	43.6	0.2	50.1	47.5	0.1	13.9	24.3	0.0	13.7	19.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	43.6	0.2	50.1	47.5	0.1	13.9	24.3	0.0	13.7	19.2	5.3
Queue Length 50th (ft)	107	137	0	40	83	0	32	240	0	11	240	48
Queue Length 95th (ft)	155	203	0	71	137	0	65	332	0	33	336	87
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	514	577	1583	274	447	1583	309	2221	1583	276	2198	820
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.41	0.16	0.47	0.31	0.11	0.39	0.61	0.04	0.39	0.57	0.29

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	365	205	180	185	260	170	230	1685	120	235	1595	485
Future Volume (veh/h)	365	205	180	185	260	170	230	1685	120	235	1595	485
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	372	209	0	189	265	0	235	1719	0	240	1628	225
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	415	393		290	326		281	2174		270	2123	659
Arrive On Green	0.12	0.21	0.00	0.08	0.17	0.00	0.10	0.43	0.00	0.06	0.28	0.28
Sat Flow, veh/h	3456	1870	1585	3456	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	372	209	0	189	265	0	235	1719	0	240	1628	225
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1728	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	10.6	9.9	0.0	5.3	13.6	0.0	7.4	29.1	0.0	7.6	29.3	11.3
Cycle Q Clear(g_c), s	10.6	9.9	0.0	5.3	13.6	0.0	7.4	29.1	0.0	7.6	29.3	11.3
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	415	393		290	326		281	2174		270	2123	659
V/C Ratio(X)	0.90	0.53		0.65	0.81		0.84	0.79		0.89	0.77	0.34
Avail Cap(c_a), veh/h	415	486		346	449		281	2174		270	2123	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	43.4	35.1	0.0	44.4	39.7	0.0	21.3	24.9	0.0	22.4	31.6	25.2
Incr Delay (d2), s/veh	21.6	1.1	0.0	3.3	7.8	0.0	19.4	3.0	0.0	23.4	2.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.6	0.0	2.4	6.8	0.0	4.1	11.1	0.0	4.6	12.5	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	36.2	0.0	47.7	47.6	0.0	40.7	27.9	0.0	45.8	33.8	26.3
LnGrp LOS	E	D		D	D		D	C		D	C	C
Approach Vol, veh/h		581			454			1954			2093	
Approach Delay, s/veh		54.7			47.6			29.4			34.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	49.6	12.4	25.0	14.0	48.6	16.0	21.4
Change Period (Y+Rc), s	5.0	8.0	5.0	5.0	5.0	8.0	5.0	5.0
Max Green Setting (Gmax), s	8.0	35.0	9.0	25.0	9.0	34.0	11.0	23.0
Max Q Clear Time (g_c+I1), s	9.6	31.1	7.3	11.9	9.4	31.3	12.6	15.6
Green Ext Time (p_c), s	0.0	3.1	0.1	0.8	0.0	2.3	0.0	0.8

Intersection Summary

HCM 6th Ctrl Delay	36.0
HCM 6th LOS	D

Notes

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

Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Min	C-Max	Min	Min	Min	C-Max	Min	Min
Maximum Split (s)	13	43	14	30	14	42	16	28
Maximum Split (%)	13.0%	43.0%	14.0%	30.0%	14.0%	42.0%	16.0%	28.0%
Minimum Split (s)	10	35	10	28	10	35	10	28
Yellow Time (s)	3.5	5	3.5	3.5	3.5	5	3.5	3.5
All-Red Time (s)	1.5	3	1.5	1.5	1.5	3	1.5	1.5
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		4				4		
Flash Dont Walk (s)		23				23		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	29	42	85	99	29	43	85	1
End Time (s)	42	85	99	29	43	85	1	29
Yield/Force Off (s)	37	77	94	24	38	77	96	24
Yield/Force Off 170(s)	37	54	94	24	38	54	96	24
Local Start Time (s)	86	99	42	56	86	0	42	58
Local Yield (s)	94	34	51	81	95	34	53	81
Local Yield 170(s)	94	11	51	81	95	11	53	81

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 43 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 3: US287 & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	372	209	184	189	265	173	235	1719	122	240	1628	495
v/c Ratio	0.91	0.51	0.12	0.56	0.72	0.11	0.79	0.93	0.08	0.79	0.87	0.58
Control Delay	70.4	38.2	0.1	50.1	48.6	0.1	40.5	40.6	0.1	44.8	27.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.4	38.2	0.1	50.1	48.6	0.1	40.5	40.6	0.1	44.8	27.8	8.3
Queue Length 50th (ft)	122	117	0	60	158	0	87	383	0	59	390	168
Queue Length 95th (ft)	#206	180	0	96	234	0	#238	#488	0	#252	#463	113
Internal Link Dist (ft)		644			2559			634			2545	
Turn Bay Length (ft)	250		200	300		350	350		450	250		360
Base Capacity (vph)	411	484	1583	343	447	1583	299	1855	1583	305	1875	849
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.43	0.12	0.55	0.59	0.11	0.79	0.93	0.08	0.79	0.87	0.58

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	15	130	170	30	110	225	1330	65	50	1075	120
Future Volume (veh/h)	175	15	130	170	30	110	225	1330	65	50	1075	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	15	0	173	31	0	230	1357	10	51	1097	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	112		223	188		437	2947	915	326	2754	
Arrive On Green	0.08	0.06	0.00	0.13	0.10	0.00	0.09	0.58	0.58	0.05	0.54	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	179	15	0	173	31	0	230	1357	10	51	1097	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	5.0	0.8	0.0	9.4	1.5	0.0	5.3	15.3	0.3	1.2	12.6	0.0
Cycle Q Clear(g_c), s	5.0	0.8	0.0	9.4	1.5	0.0	5.3	15.3	0.3	1.2	12.6	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	291	112		223	188		437	2947	915	326	2754	
V/C Ratio(X)	0.61	0.13		0.78	0.16		0.53	0.46	0.01	0.16	0.40	
Avail Cap(c_a), veh/h	708	411		312	355		543	2947	915	356	2754	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.79	0.79	0.79	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.2	44.5	0.0	42.4	41.1	0.0	9.2	12.2	9.0	9.5	13.5	0.0
Incr Delay (d2), s/veh	2.1	0.5	0.0	7.9	0.4	0.0	0.8	0.4	0.0	0.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.4	0.0	4.5	0.7	0.0	1.6	4.9	0.1	0.4	4.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	45.1	0.0	50.3	41.5	0.0	9.9	12.6	9.0	9.8	13.9	0.0
LnGrp LOS	D	D		D	D		A	B	A	A	B	
Approach Vol, veh/h		194			204			1597			1148	
Approach Delay, s/veh		46.2			48.9			12.2			13.8	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	64.7	16.0	11.0	12.1	60.9	11.9	15.1
Change Period (Y+Rc), s	4.5	8.0	4.5	6.0	4.5	8.0	4.5	6.0
Max Green Setting (Gmax), s	5.5	34.0	16.5	21.0	13.5	26.0	19.5	18.0
Max Q Clear Time (g_c+I1), s	3.2	17.3	11.4	2.8	7.3	14.6	7.0	3.5
Green Ext Time (p_c), s	0.0	7.9	0.2	0.0	0.3	5.0	0.4	0.1

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

Notes

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

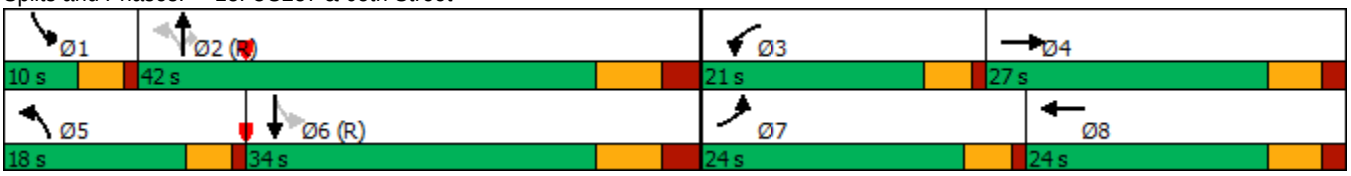
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	10	42	21	27	18	34	24	24
Maximum Split (%)	10.0%	42.0%	21.0%	27.0%	18.0%	34.0%	24.0%	24.0%
Minimum Split (s)	9.5	26	9.5	24	9.5	26	24	24
Yellow Time (s)	3.5	5	3.5	4	3.5	5	3.5	4
All-Red Time (s)	1	3	1	2	1	3	1	2
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7	7
Flash Dont Walk (s)		11		11		11	11	11
Dual Entry	No	Yes	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	82	92	34	55	82	0	34	58
End Time (s)	92	34	55	82	0	34	58	82
Yield/Force Off (s)	87.5	26	50.5	76	95.5	26	53.5	76
Yield/Force Off 170(s)	87.5	15	50.5	65	95.5	15	42.5	65
Local Start Time (s)	82	92	34	55	82	0	34	58
Local Yield (s)	87.5	26	50.5	76	95.5	26	53.5	76
Local Yield 170(s)	87.5	15	50.5	65	95.5	15	42.5	65

Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	85

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 18: US287 & 65th Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	179	15	133	173	31	112	230	1357	66	51	1097	122
v/c Ratio	0.42	0.11	0.08	0.59	0.18	0.07	0.54	0.46	0.07	0.17	0.42	0.08
Control Delay	43.2	44.5	0.1	46.7	43.2	0.1	10.3	5.2	0.6	8.4	18.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.2	44.5	0.1	46.7	43.2	0.1	10.3	5.2	0.6	8.4	18.0	0.1
Queue Length 50th (ft)	55	9	0	92	19	0	16	125	1	9	156	0
Queue Length 95th (ft)	86	29	0	172	46	0	42	175	m2	26	253	0
Internal Link Dist (ft)		505			449			2545			694	
Turn Bay Length (ft)	275		200	250		250	460		400	400		470
Base Capacity (vph)	703	409	1583	334	353	1583	472	2973	980	308	2628	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.04	0.08	0.52	0.09	0.07	0.49	0.46	0.07	0.17	0.42	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	30	275	120	15	80	245	1410	185	120	1565	195
Future Volume (veh/h)	225	30	275	120	15	80	245	1410	185	120	1565	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	230	31	0	122	15	0	250	1439	104	122	1597	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	121		168	111		340	3025	939	304	2890	
Arrive On Green	0.10	0.06	0.00	0.09	0.06	0.00	0.06	0.40	0.40	0.06	0.57	0.00
Sat Flow, veh/h	3456	1870	1585	1781	1870	1585	1781	5106	1585	1781	5106	1585
Grp Volume(v), veh/h	230	31	0	122	15	0	250	1439	104	122	1597	0
Grp Sat Flow(s),veh/h/ln	1728	1870	1585	1781	1870	1585	1781	1702	1585	1781	1702	1585
Q Serve(g_s), s	6.4	1.6	0.0	6.7	0.8	0.0	5.4	21.0	4.1	2.8	19.7	0.0
Cycle Q Clear(g_c), s	6.4	1.6	0.0	6.7	0.8	0.0	5.4	21.0	4.1	2.8	19.7	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	345	121		168	111		340	3025	939	304	2890	
V/C Ratio(X)	0.67	0.26		0.73	0.13		0.73	0.48	0.11	0.40	0.55	
Avail Cap(c_a), veh/h	708	505		223	355		359	3025	939	316	2890	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	0.39	0.39	0.39	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.4	44.5	0.0	44.0	44.6	0.0	15.3	18.6	13.5	10.2	13.7	0.0
Incr Delay (d2), s/veh	2.2	1.1	0.0	7.8	0.5	0.0	2.9	0.2	0.1	0.9	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.8	0.0	3.3	0.4	0.0	2.7	8.4	1.4	0.9	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.6	45.6	0.0	51.8	45.1	0.0	18.3	18.8	13.6	11.1	14.5	0.0
LnGrp LOS	D	D		D	D		B	B	B	B	B	
Approach Vol, veh/h		261			137			1793			1719	
Approach Delay, s/veh		45.6			51.1			18.4			14.2	
Approach LOS		D			D			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	66.2	12.9	11.5	12.0	63.6	13.5	11.0
Change Period (Y+Rc), s	4.5	8.0	4.5	6.0	4.5	8.0	4.5	6.0
Max Green Setting (Gmax), s	5.5	34.0	11.5	26.0	8.5	31.0	19.5	18.0
Max Q Clear Time (g_c+I1), s	4.8	23.0	8.7	3.6	7.4	21.7	8.4	2.8
Green Ext Time (p_c), s	0.0	6.6	0.1	0.1	0.1	6.1	0.6	0.0

Intersection Summary

HCM 6th Ctrl Delay	19.5
HCM 6th LOS	B

Notes

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

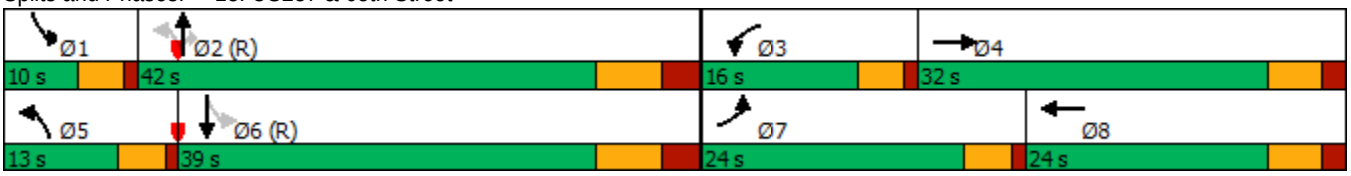
Phase Number	1	2	3	4	5	6	7	8
Movement	SBL	NBTL	WBL	EBT	NBL	SBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	10	42	16	32	13	39	24	24
Maximum Split (%)	10.0%	42.0%	16.0%	32.0%	13.0%	39.0%	24.0%	24.0%
Minimum Split (s)	9.5	26	9.5	24	9.5	26	24	24
Yellow Time (s)	3.5	5	3.5	4	3.5	5	3.5	4
All-Red Time (s)	1	3	1	2	1	3	1	2
Minimum Initial (s)	5	5	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)		7		7		7	7	7
Flash Dont Walk (s)		11		11		11	11	11
Dual Entry	No	Yes	No	Yes	No	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	87	97	39	55	87	0	39	63
End Time (s)	97	39	55	87	0	39	63	87
Yield/Force Off (s)	92.5	31	50.5	81	95.5	31	58.5	81
Yield/Force Off 170(s)	92.5	20	50.5	70	95.5	20	47.5	70
Local Start Time (s)	87	97	39	55	87	0	39	63
Local Yield (s)	92.5	31	50.5	81	95.5	31	58.5	81
Local Yield 170(s)	92.5	20	50.5	70	95.5	20	47.5	70

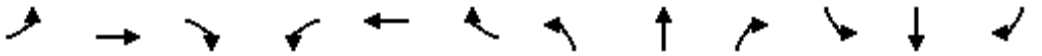
Intersection Summary

Cycle Length	100
Control Type	Actuated-Coordinated
Natural Cycle	95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Splits and Phases: 18: US287 & 65th Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	230	31	281	122	15	82	250	1439	189	122	1597	199
v/c Ratio	0.44	0.19	0.18	0.59	0.11	0.05	0.64	0.51	0.20	0.39	0.65	0.13
Control Delay	40.9	44.1	0.2	53.7	44.4	0.1	33.7	4.2	1.2	10.8	23.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.9	44.1	0.2	53.7	44.4	0.1	33.7	4.2	1.2	10.8	23.6	0.2
Queue Length 50th (ft)	60	19	0	74	9	0	78	38	0	24	299	0
Queue Length 95th (ft)	105	45	0	133	29	0	m63	m270	m20	51	#424	0
Internal Link Dist (ft)		505			449			2545			694	
Turn Bay Length (ft)	275		200	250		250	460		400	400		470
Base Capacity (vph)	738	503	1583	221	353	1583	389	2841	968	314	2445	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.06	0.18	0.55	0.04	0.05	0.64	0.51	0.20	0.39	0.65	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	310	105	110	245	5	145	15	130	5	45	35
Future Volume (veh/h)	10	310	105	110	245	5	145	15	130	5	45	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	326	18	116	258	4	153	16	25	5	47	9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	564	520	441	555	661	10	482	30	319	123	296	53
Arrive On Green	0.04	0.28	0.28	0.12	0.36	0.33	0.17	0.20	0.20	0.17	0.20	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1837	28	1430	150	1585	65	1468	265
Grp Volume(v), veh/h	11	326	18	116	0	262	169	0	25	61	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1865	1580	0	1585	1799	0	0
Q Serve(g_s), s	0.1	5.4	0.3	1.3	0.0	3.7	0.1	0.0	0.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.4	0.3	1.3	0.0	3.7	3.1	0.0	0.5	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.91		1.00	0.08		0.15
Lane Grp Cap(c), veh/h	564	520	441	555	0	671	468	0	319	422	0	0
V/C Ratio(X)	0.02	0.63	0.04	0.21	0.00	0.39	0.36	0.00	0.08	0.14	0.00	0.00
Avail Cap(c_a), veh/h	841	1058	897	686	0	1055	933	0	852	1017	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.2	11.2	9.3	6.4	0.0	8.4	12.9	0.0	11.5	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.2	0.0	0.4	0.5	0.0	0.1	0.2	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	0.0	1.8	0.1	0.3	0.0	1.0	1.0	0.0	0.1	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.2	12.4	9.4	6.6	0.0	8.8	13.4	0.0	11.6	11.9	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	A
Approach Vol, veh/h		355			378			194			61	
Approach Delay, s/veh		12.1			8.1			13.1			11.9	
Approach LOS		B			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	15.8		12.0	4.5	18.7		12.0				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	3.3	7.4		3.0	2.1	5.7		5.1				
Green Ext Time (p_c), s	0.1	1.4		0.2	0.0	1.1		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	10.8
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Monroe & 57th Street

5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	11	326	111	116	263	169	137	89
v/c Ratio	0.02	0.56	0.19	0.20	0.32	0.48	0.25	0.18
Control Delay	5.8	19.0	3.7	6.5	11.4	21.3	4.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.8	19.0	3.7	6.5	11.4	21.3	4.5	10.7
Queue Length 50th (ft)	1	76	0	13	37	40	0	11
Queue Length 95th (ft)	7	161	24	38	129	96	29	40
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	654	865	803	593	972	561	779	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.38	0.14	0.20	0.27	0.30	0.18	0.11

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	285	185	155	430	10	120	55	100	5	35	15
Future Volume (veh/h)	25	285	185	155	430	10	120	55	100	5	35	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	300	55	163	453	10	126	58	1	5	37	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	432	506	429	583	639	14	376	108	320	128	320	24
Arrive On Green	0.06	0.27	0.27	0.14	0.35	0.32	0.17	0.20	0.20	0.17	0.20	0.17
Sat Flow, veh/h	1781	1870	1585	1781	1823	40	1030	537	1585	84	1587	119
Grp Volume(v), veh/h	26	300	55	163	0	463	184	0	1	45	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1863	1567	0	1585	1791	0	0
Q Serve(g_s), s	0.4	5.0	0.9	2.0	0.0	7.7	2.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	5.0	0.9	2.0	0.0	7.7	3.8	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.68		1.00	0.11		0.07
Lane Grp Cap(c), veh/h	432	506	429	583	0	653	441	0	320	423	0	0
V/C Ratio(X)	0.06	0.59	0.13	0.28	0.00	0.71	0.42	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	672	1038	880	681	0	1034	927	0	836	999	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.5	11.4	9.9	6.5	0.0	10.1	13.2	0.0	11.5	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.1	0.1	0.3	0.0	1.4	0.6	0.0	0.0	0.1	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	0.1	1.6	0.3	0.4	0.0	2.4	1.2	0.0	0.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	12.5	10.1	6.8	0.0	11.6	13.9	0.0	11.5	12.0	0.0	0.0
LnGrp LOS	A	B	B	A	A	B	B	A	B	B	A	A
Approach Vol, veh/h		381			626			185			45	
Approach Delay, s/veh		11.9			10.3			13.8			12.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	15.8		12.4	5.1	18.6		12.4				
Change Period (Y+Rc), s	4.0	7.0		6.0	4.0	7.0		6.0				
Max Green Setting (Gmax), s	6.0	19.0		18.0	6.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	4.0	7.0		5.6	2.4	9.7		5.8				
Green Ext Time (p_c), s	0.1	1.4		0.1	0.0	1.9		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Phase Number	1	2	4	5	6	8
Movement	WBL	EBTL	SBTL	EBL	WBTL	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize	Yes	Yes		Yes	Yes	
Recall Mode	None	None	Min	None	None	Min
Maximum Split (s)	10	26	24	10	26	24
Maximum Split (%)	16.7%	43.3%	40.0%	16.7%	43.3%	40.0%
Minimum Split (s)	10	25	24	10	25	24
Yellow Time (s)	3	5	4	3	5	4
All-Red Time (s)	1	2	2	1	2	2
Minimum Initial (s)	5	5	5	5	5	5
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		11	11		11	11
Dual Entry	No	Yes	Yes	No	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	10	36	0	10	36
End Time (s)	10	36	0	10	36	0
Yield/Force Off (s)	6	29	54	6	29	54
Yield/Force Off 170(s)	6	18	54	6	18	54
Local Start Time (s)	50	0	26	50	0	26
Local Yield (s)	56	19	44	56	19	44
Local Yield 170(s)	56	8	44	56	8	44

Intersection Summary

Cycle Length		60
Control Type	Actuated-Uncoordinated	
Natural Cycle		60

Splits and Phases: 5: Monroe & 57th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	26	300	195	163	464	184	105	58
v/c Ratio	0.04	0.51	0.31	0.27	0.57	0.48	0.20	0.12
Control Delay	5.9	18.1	4.3	7.0	15.3	20.3	2.7	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	18.1	4.3	7.0	15.3	20.3	2.7	11.9
Queue Length 50th (ft)	3	68	0	18	74	42	0	9
Queue Length 95th (ft)	13	148	37	51	#276	101	17	32
Internal Link Dist (ft)		2559			1310	458		384
Turn Bay Length (ft)	330		250	115			180	
Base Capacity (vph)	588	852	830	616	942	614	770	763
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.35	0.23	0.26	0.49	0.30	0.14	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	430	5	5	285	10	10	0	5	20	0	40
Future Vol, veh/h	15	430	5	5	285	10	10	0	5	20	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	453	5	5	300	11	11	0	5	21	0	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	311	0	0	458	0	0	825	809	456	806	806	306
Stage 1	-	-	-	-	-	-	488	488	-	316	316	-
Stage 2	-	-	-	-	-	-	337	321	-	490	490	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1249	-	-	1103	-	-	292	314	604	300	316	734
Stage 1	-	-	-	-	-	-	561	550	-	695	655	-
Stage 2	-	-	-	-	-	-	677	652	-	560	549	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1249	-	-	1103	-	-	272	308	604	293	310	734
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	308	-	293	310	-
Stage 1	-	-	-	-	-	-	554	543	-	686	652	-
Stage 2	-	-	-	-	-	-	635	649	-	548	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	16.3	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	333	1249	-	-	1103	-	-	489
HCM Lane V/C Ratio	0.047	0.013	-	-	0.005	-	-	0.129
HCM Control Delay (s)	16.3	7.9	-	-	8.3	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	320	5	5	560	20	5	0	5	10	0	25
Future Vol, veh/h	40	320	5	5	560	20	5	0	5	10	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	337	5	5	589	21	5	0	5	11	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	610	0	0	342	0	0	1047	1044	340	1036	1036	600
Stage 1	-	-	-	-	-	-	424	424	-	610	610	-
Stage 2	-	-	-	-	-	-	623	620	-	426	426	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	969	-	-	1217	-	-	206	229	702	210	232	501
Stage 1	-	-	-	-	-	-	608	587	-	482	485	-
Stage 2	-	-	-	-	-	-	474	480	-	606	586	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	969	-	-	1217	-	-	188	218	702	201	221	501
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	218	-	201	221	-
Stage 1	-	-	-	-	-	-	582	562	-	461	483	-
Stage 2	-	-	-	-	-	-	447	478	-	575	561	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	17.6	16.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	297	969	-	-	1217	-	-	351
HCM Lane V/C Ratio	0.035	0.043	-	-	0.004	-	-	0.105
HCM Control Delay (s)	17.6	8.9	-	-	8	-	-	16.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	345	5	5	190	15	5	0	5	25	0	95
Future Vol, veh/h	105	345	5	5	190	15	5	0	5	25	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	111	363	5	5	200	16	5	0	5	26	0	100

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	216	0	0	368	0	0	856	814	366	808	808	208
Stage 1	-	-	-	-	-	-	588	588	-	218	218	-
Stage 2	-	-	-	-	-	-	268	226	-	590	590	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1354	-	-	1191	-	-	278	312	679	299	315	832
Stage 1	-	-	-	-	-	-	495	496	-	784	723	-
Stage 2	-	-	-	-	-	-	738	717	-	494	495	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1354	-	-	1191	-	-	229	285	679	277	288	832
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	285	-	277	288	-
Stage 1	-	-	-	-	-	-	454	455	-	720	720	-
Stage 2	-	-	-	-	-	-	647	714	-	450	454	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0.2	15.9	11.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	342	1354	-	-	1191	-	-	277	832
HCM Lane V/C Ratio	0.031	0.082	-	-	0.004	-	-	0.095	0.12
HCM Control Delay (s)	15.9	7.9	-	-	8	-	-	19.4	9.9
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0.3	0.4

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	245	5	5	415	30	5	0	5	35	0	160
Future Vol, veh/h	75	245	5	5	415	30	5	0	5	35	0	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	250	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	79	258	5	5	437	32	5	0	5	37	0	168

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	469	0	0	263	0	0	966	898	261	884	884	453
Stage 1	-	-	-	-	-	-	419	419	-	463	463	-
Stage 2	-	-	-	-	-	-	547	479	-	421	421	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1093	-	-	1301	-	-	234	279	778	266	284	607
Stage 1	-	-	-	-	-	-	612	590	-	579	564	-
Stage 2	-	-	-	-	-	-	521	555	-	610	589	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1093	-	-	1301	-	-	159	258	778	249	262	607
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	258	-	249	262	-
Stage 1	-	-	-	-	-	-	568	548	-	537	562	-
Stage 2	-	-	-	-	-	-	375	553	-	562	547	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0.1	19.2	14.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	264	1093	-	-	1301	-	-	249	607
HCM Lane V/C Ratio	0.04	0.072	-	-	0.004	-	-	0.148	0.277
HCM Control Delay (s)	19.2	8.6	-	-	7.8	-	-	22	13.2
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.5	1.1

Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	45	40	35	70	55	20
Future Vol, veh/h	45	40	35	70	55	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	42	37	74	58	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	89	0	216	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	148	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1506	-	772	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1506	-	752	995
Mov Cap-2 Maneuver	-	-	-	-	752	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	857	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	804	-	-	1506	-
HCM Lane V/C Ratio	0.098	-	-	0.024	-
HCM Control Delay (s)	10	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	65	30	75	60	35
Future Vol, veh/h	100	65	30	75	60	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	68	32	79	63	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	173	0	282	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	143	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1404	-	708	909
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	884	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1404	-	691	909
Mov Cap-2 Maneuver	-	-	-	-	691	-
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	863	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	758	-	-	1404	-
HCM Lane V/C Ratio	0.132	-	-	0.022	-
HCM Control Delay (s)	10.5	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	40	5	10	35	5	15	5	10	10	20	55
Future Vol, veh/h	20	40	5	10	35	5	15	5	10	10	20	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	42	5	11	37	5	16	5	11	11	21	58

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	47	0	0	188	151	45	157	151	40
Stage 1	-	-	-	-	-	-	87	87	-	62	62	-
Stage 2	-	-	-	-	-	-	101	64	-	95	89	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1567	-	-	1560	-	-	772	741	1025	809	741	1031
Stage 1	-	-	-	-	-	-	921	823	-	949	843	-
Stage 2	-	-	-	-	-	-	905	842	-	912	821	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1567	-	-	1560	-	-	701	725	1025	784	725	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	701	725	-	784	725	-
Stage 1	-	-	-	-	-	-	908	811	-	936	837	-
Stage 2	-	-	-	-	-	-	827	836	-	884	810	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	1.5	9.8	9.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	788	1567	-	-	1560	-	-	907
HCM Lane V/C Ratio	0.04	0.013	-	-	0.007	-	-	0.099
HCM Control Delay (s)	9.8	7.3	0	-	7.3	0	-	9.4
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	60	60	15	10	55	10	10	20	10	5	15	40
Future Vol, veh/h	60	60	15	10	55	10	10	20	10	5	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	63	16	11	58	11	11	21	11	5	16	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	79	0	0	312	288	71	299	291	64
Stage 1	-	-	-	-	-	-	197	197	-	86	86	-
Stage 2	-	-	-	-	-	-	115	91	-	213	205	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1532	-	-	1519	-	-	641	622	991	653	619	1000
Stage 1	-	-	-	-	-	-	805	738	-	922	824	-
Stage 2	-	-	-	-	-	-	890	820	-	789	732	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1532	-	-	1519	-	-	578	590	991	604	587	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	578	590	-	604	587	-
Stage 1	-	-	-	-	-	-	770	706	-	882	817	-
Stage 2	-	-	-	-	-	-	829	813	-	725	701	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	1	10.9	9.8
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	653	1532	-	-	1519	-	-	813
HCM Lane V/C Ratio	0.064	0.041	-	-	0.007	-	-	0.078
HCM Control Delay (s)	10.9	7.5	0	-	7.4	0	-	9.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	55	35	5	10	15
Future Vol, veh/h	5	55	35	5	10	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	58	37	5	11	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	42	0	-	0	108	40
Stage 1	-	-	-	-	40	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1567	-	-	-	889	1031
Stage 1	-	-	-	-	982	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1567	-	-	-	886	1031
Mov Cap-2 Maneuver	-	-	-	-	886	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1567	-	-	-	968
HCM Lane V/C Ratio	0.003	-	-	-	0.027
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	55	65	10	5	10
Future Vol, veh/h	20	55	65	10	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	58	68	11	5	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	79	0	-	0	174	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	100	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1519	-	-	-	816	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	924	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1519	-	-	-	805	988
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	924	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1519	-	-	-	918
HCM Lane V/C Ratio	0.014	-	-	-	0.017
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	55	35	20	100	85	45
Future Vol, veh/h	55	35	20	100	85	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	37	21	105	89	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	113	136	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	147	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	729	940	1448	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	718	940	1448	-	-	-
Mov Cap-2 Maneuver	718	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1448	-	791	-	-
HCM Lane V/C Ratio	0.015	-	0.12	-	-
HCM Control Delay (s)	7.5	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	2.2

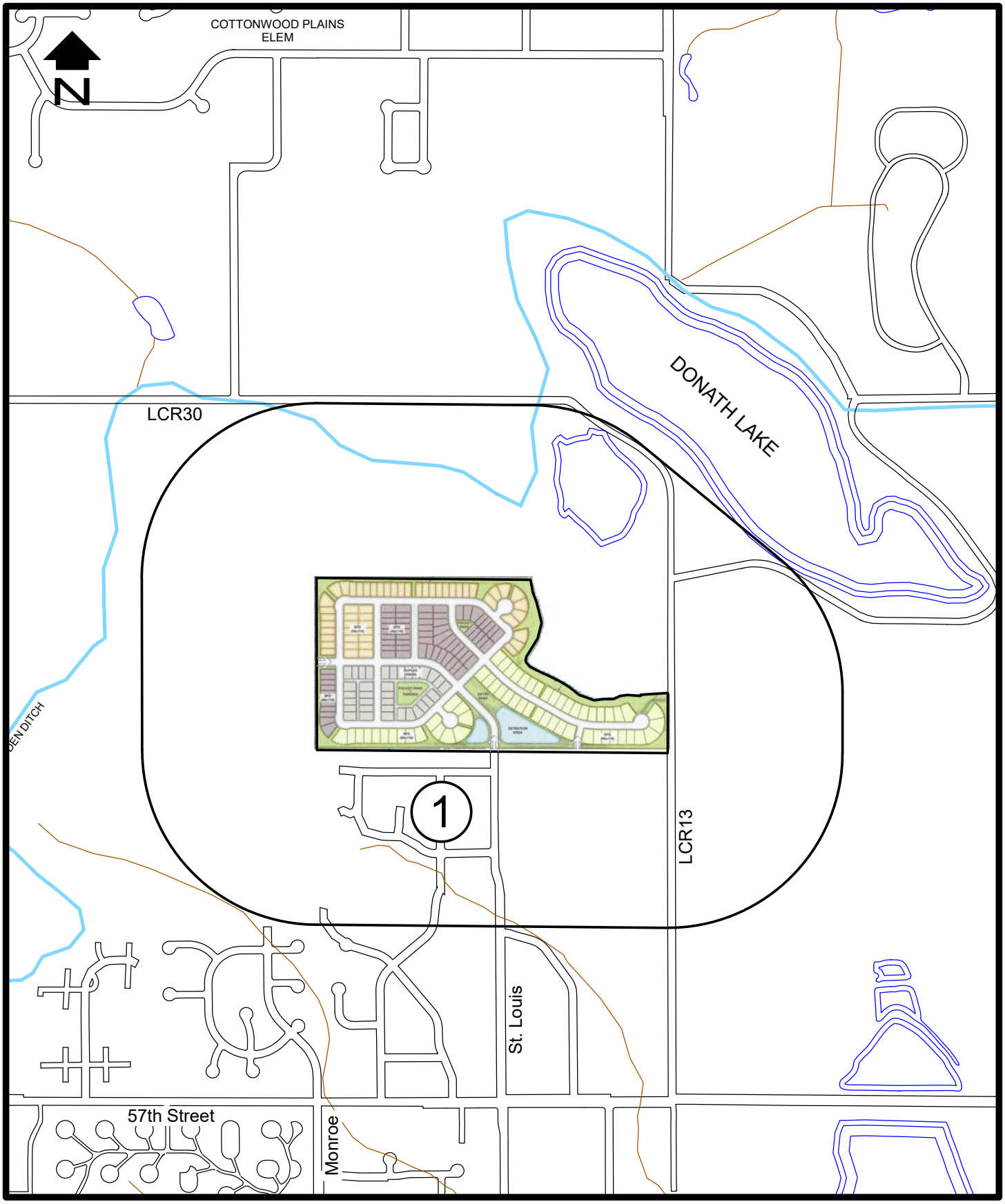
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	40	20	30	80	180	45
Future Vol, veh/h	40	20	30	80	180	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	21	32	84	189	47

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	361	213	236	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	638	827	1331	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	622	827	1331	-	-	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1331	-	678	-	-
HCM Lane V/C Ratio	0.024	-	0.093	-	-
HCM Control Delay (s)	7.8	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

APPENDIX I



SCALE: 1"=1000'

PEDESTRIAN INFLUENCE AREA

DELICH ASSOCIATES

Forro Residential TIS, July 2023

Pedestrian LOS Worksheet

Project Location Classification:

	Description of Applicable Destination Area Within 1320'	Destination Area Classification		Level of Service (minimum based on project location classification)				
				Directness	Continuity	Street Crossings	Visual Interest & Amenities	Security
1	Residential neighborhood to the south of the site	Residential	Minimum	-	-	-	-	-
			Actual	A	E	A	C	C
			Proposed	A	E	A	C	C
2			Minimum					
			Actual					
			Proposed					
3			Minimum					
			Actual					
			Proposed					
4			Minimum					
			Actual					
			Proposed					
5			Minimum					
			Actual					
			Proposed					
6			Minimum					
			Actual					
			Proposed					
7			Minimum					
			Actual					
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8			Minimum					
			Actual					
			Proposed					
9			Minimum					
			Actual					
			Proposed					
10			Minimum					
			Actual					
			Proposed					