



South 27th Street Chick-fil-A Restaurant Traffic Impact Analysis

City of Milwaukee
Milwaukee County, Wisconsin

May 10, 2023



TRAFFIC IMPACT STUDY FOR:

SOUTH 27TH STREET CHICK-FIL-A

CITY OF MILWAUKEE, MILWAUKEE COUNTY, WISCONSIN

May 10, 2023



PREPARED FOR:

HR Green, Inc.

420 N. Front Street

McHenry, IL 60050

Contact Person: Joe Vavrina, P.E., LEED, AP

PREPARED BY:

Traffic Analysis & Design, Inc.

PO Box 128

Cedarburg, WI 53012

Phone: (800) 605-3091

Contact Persons: Don Lee, P.E.

John Bieberitz, P.E., PTOE

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CHAPTER I – INTRODUCTION & EXECUTIVE SUMMARY

PART A – PURPOSE OF REPORT AND STUDY OBJECTIVES

This traffic impact analysis (TIA) report was prepared to determine the traffic impacts of a proposed Chick-Fil-A restaurant along South 27th Street at West Morgan Avenue in the City of Milwaukee, Milwaukee County, Wisconsin.

PART B – EXECUTIVE SUMMARY

The executive summary includes a description of the study area, description of the development and conclusions based on the findings of this traffic study.

B1. Proposed Development

The 4,958 square foot Chick-Fil-A restaurant is proposed to be constructed on the site of the existing Zebb's Family Restaurant, located on the west side of South 27th Street immediately south of West Morgan Avenue. The restaurant includes two drive-through lanes and provides seating for 68 patrons inside and another 12 patrons outside. Access to the site is proposed via cross access with the adjacent Office Depot full access roadway connection at the signalized intersection of West Morgan Avenue and Lakefield Drive and an additional right-out driveway onto West Morgan Avenue, immediately west of South 27th Street. The Office Depot lot also has additional access to the south along West Loomis Road that some patrons are expected to utilize.

Trips for the proposed Chick-Fil-A restaurant were based on driveway counts conducted in late-January at an existing Chick-Fil-A restaurant, located on South 76th Street in Greenfield, Wisconsin. Based on the calculated rates from the existing local site, the proposed Chick-Fil-A restaurant is expected to generate about 260 trips (135 in/125 out) during the weekday midday peak hour, 250 trips (125 in/125 out) during the weekday evening peak hour and 280 trips (140 in/140 out) during the Saturday midday peak hour.

Drive-through queues were also collected for a previous study at two existing Chick-Fil-A restaurants in Brookfield. At the busiest of the two restaurants (Capitol Drive Chick-Fil-A), field staff recorded a maximum of 18 vehicles queued up from the ordering kiosks. According to the proposed South 27th Street Chick-Fil-A site plan, there is space for about 20 vehicles per lane to queue up from the ordering kiosks. If the South 27th Street Chick-Fil-A turns out to be as busy as the Capitol Drive Chick-Fil-A during the peak hours, then there is expected to be adequate queue storage for drive-through vehicles without vehicles extending into or blocking the internal parking or circulating roadways within and adjacent to the site.

B2. Study Area Intersections

The existing intersections evaluated in this study include the following:

- South 27th Street & West Morgan Avenue (traffic signal control)
- South 27th Street & West Loomis Road (traffic signal control)
- West Morgan Avenue & Office Depot/West Lakefield Drive (traffic signal control)
- West Morgan Avenue & right-out driveway (one-way stop control)

B3. Traffic Operations

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual, 6th edition* (HCM) using Synchro 11 modeling software. For the purpose of this study, LOS D was used to define acceptable peak hour operating conditions. *Note that improvements discussed below are recommended for consideration and are not legally binding. All agencies reserve the right to determine alternative solutions.*

The following modifications are recommended to accommodate traffic based on the assumptions outlined in the TIA. Recommendations are also shown on [Exhibit 1-1](#).

General

- Provide Chick-Fil-A site driveways to West Morgan Avenue and the Office Depot internal frontage road as shown on the development site plan. The West Morgan Avenue driveway should be designed and signed for right-out operation only with stop sign control at the driveway exit and “Exit Only” (R7-201E) sign restricting entering vehicles. Additional signage should be provided for exiting traffic with a Right-turn Only (R3-5R) sign provided within the site at the driveway.

West Morgan Avenue at West Lakefield Drive

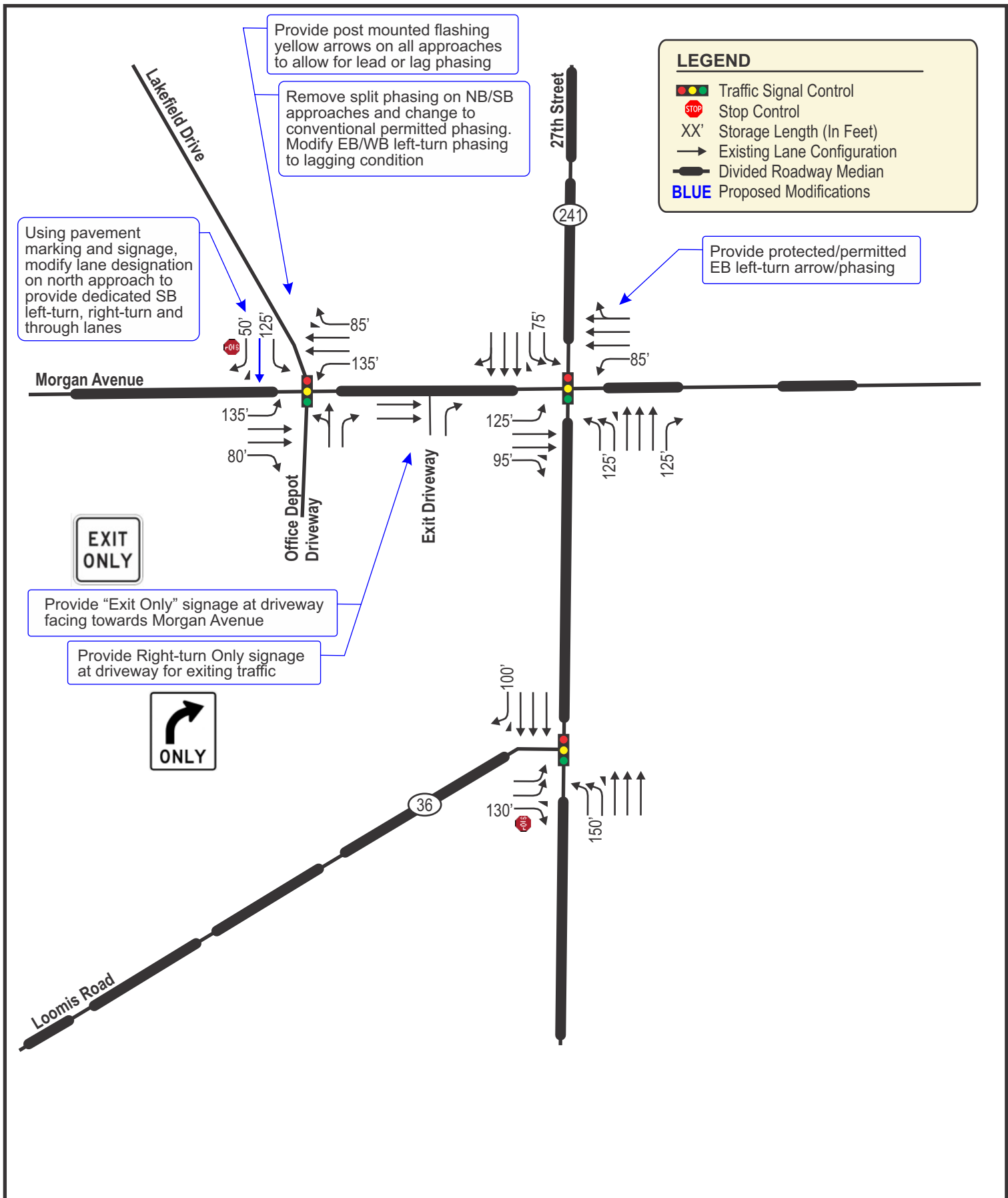
- Using pavement marking and signage, change the lane configuration on the north approach to provide a dedicated left-turn lane, a dedicated through lane and a dedicated right-turn lane (changing the center lane from a shared lane to a dedicated through lane).
- Remove the split phasing for the northbound/southbound movements at the intersection to conventional phasing.
- Program the controller to change the eastbound/westbound left-turn phasing to a lagging condition.
- Provide post-mounted flashing yellow arrows on all approaches to accommodate either lead or lag left-turn phasing.

West Morgan Avenue at South 27th Street

- Provide left-turn arrow/phasing for eastbound left-turn movements.
- Program the controller to add the left-turn phasing condition.

B4. Conclusion

All movements at the study area intersections are expected to operate efficiently with the assumptions outlined in this TIA and with the identified recommended modifications. With the recommended modifications implemented at the West Morgan Avenue intersection with West Lakefield Drive and the West Morgan Avenue intersection with South 27th Street, the revised geometry and phasing is expected to improve the overall operations and safety at the intersections.



CHAPTER II – EXISTING CONDITIONS

PART A – STUDY AREA

A site location map illustrating the location of the study intersections and proposed development area is shown on [Exhibit 2-1](#). The intersections evaluated in this study include:

- South 27th Street & West Morgan Avenue (traffic signal control)
- South 27th Street & West Loomis Road (traffic signal control)
- West Morgan Avenue & Office Depot/West Lakefield Drive (traffic signal control)
- West Morgan Avenue & right-out driveway (one-way stop control)

[Exhibit 2-2](#) shows the existing transportation system detail for the roadways within the study area. The exhibit illustrates posted speed limits, distances between driveways and intersections, and existing intersection geometrics (travel lanes, intersection turn lanes, traffic control, and turn-lane storage). The following roadways were included in the study area:

South 27th Street is a six-lane divided north/south principal arterial with a posted speed limit of 35-mph within the study area. According to the Wisconsin Department of Transportation (WisDOT), the 2017 annual average daily traffic (AADT) on South 27th Street was 29,100 vehicles per day (vpd) north of West Morgan Avenue, 32,600-vpd (2021 count) south of West Morgan Avenue and 25,100-vpd (2021 count) south of West Loomis Road. Sidewalks run along both sides of South 27th Street within the limits of the study area.

West Morgan Avenue is a four-lane divided east/west minor arterial with a posted speed limit of 30-mph within the study area. The WisDOT 2021 AADT on West Morgan Avenue was 10,500-vpd west of South 27th Street and 13,100-vpd to the east. Sidewalks run along both sides of West Morgan Avenue within the limits of the study area.

West Loomis Road is a four-lane divided northeast/southwest principal arterial with a posted speed limit of 35-mph within the study area. The WisDOT 2021 AADT on West Loomis Road was 8,500-vpd west of South 27th Street. Sidewalks run along both sides of West Loomis Road within the limits of the study area.

West Lakefield Drive is a four-lane undivided northwest/southeast major collector with a posted speed limit of 25-mph within the study area. West Lakefield Drive intersects West Morgan Avenue as the north leg of a four-legged signalized intersection with the south leg of the intersection operating as the main access drive to a commercial site (and the proposed development site). The WisDOT 2021 AADT on West Lakefield Drive was 5,100-vpd north of West Morgan Avenue. Sidewalks run along both sides of West Lakefield Drive within the limits of the study area.

PART B – DATA COLLECTION

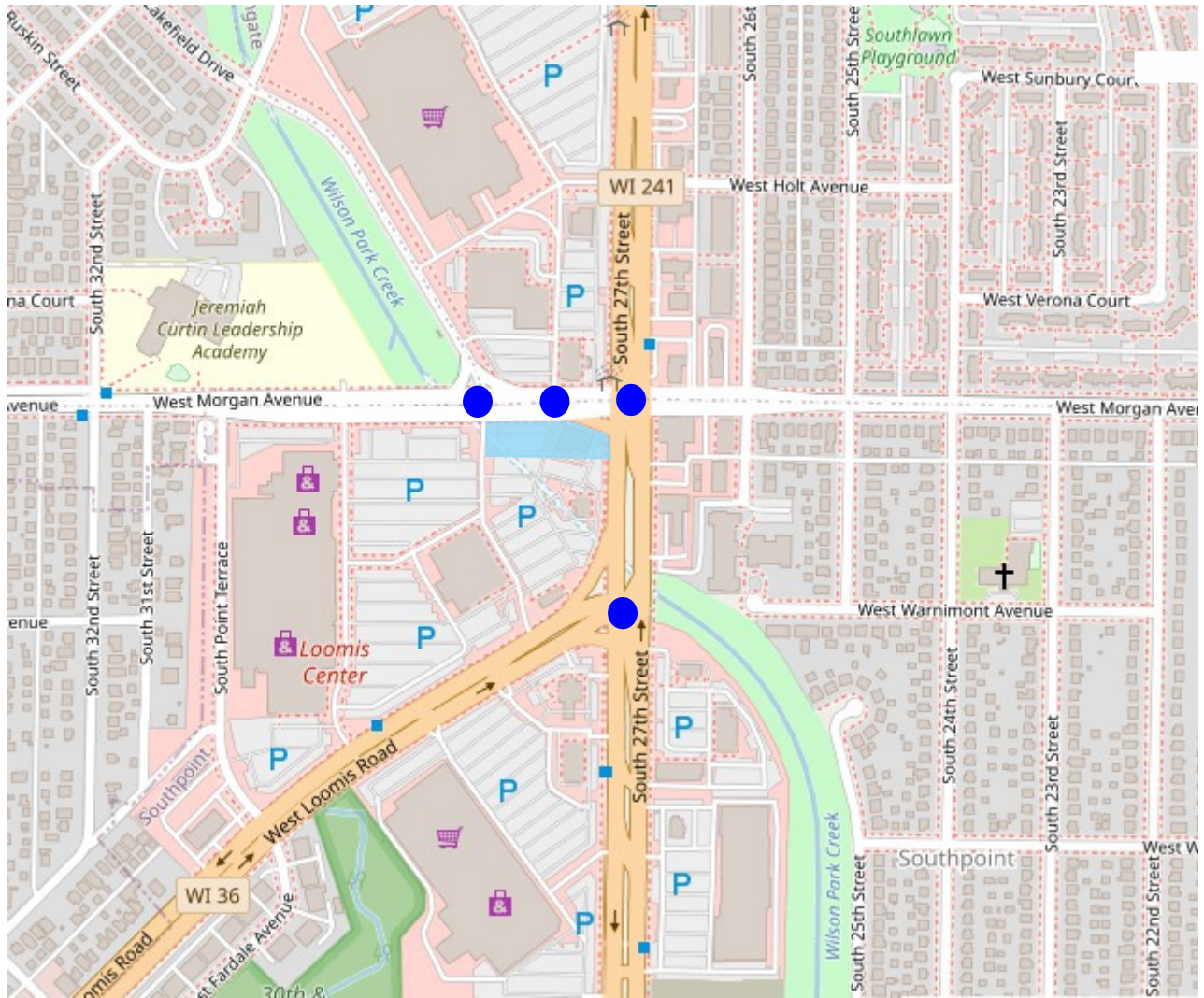
TADI collected turning movement traffic volumes at the study intersections in late-January of 2023. At all study intersections, weekday midday traffic counts were collected from 11:00 a.m. to 1:00 p.m., weekday evening traffic counts were collected from 4:00 to 6:00 p.m. and Saturday midday traffic counts were collected from 11:00 a.m. to 1:00 p.m.

To determine the number of trips typically generated by Chick-Fil-A restaurants in southeast Wisconsin, TADI counted the total number of driveway trips entering and exiting the existing Greenfield Chick-Fil-A restaurant on South 76th Street. The driveway counts were conducted for the same peak periods as listed above for the intersection counts.

Traffic signal timing data for the South 27th Street and West Morgan Avenue intersections were obtained from the City of Milwaukee. All signal timing and traffic count data collected for this study is located in [Appendix A](#).

PART C – EXISTING TRAFFIC VOLUMES

Based on the compiled traffic data at all intersections, the study area peak hours were determined to occur from noon-1:00 p.m. (weekday midday peak hour), 4:00-5:00 p.m. (weekday evening peak hour) and from 11:45 a.m.-12:45 p.m. (Saturday midday peak hour). The peak hour traffic volumes were balanced between intersections (where appropriate) and are shown on [Exhibit 2-3A](#) as the existing traffic volumes evaluated for this study. [Exhibit 2-3B](#) shows the peak hour driveway trips counted at the existing South 76th Street Chick-Fil-A store located in Greenfield.



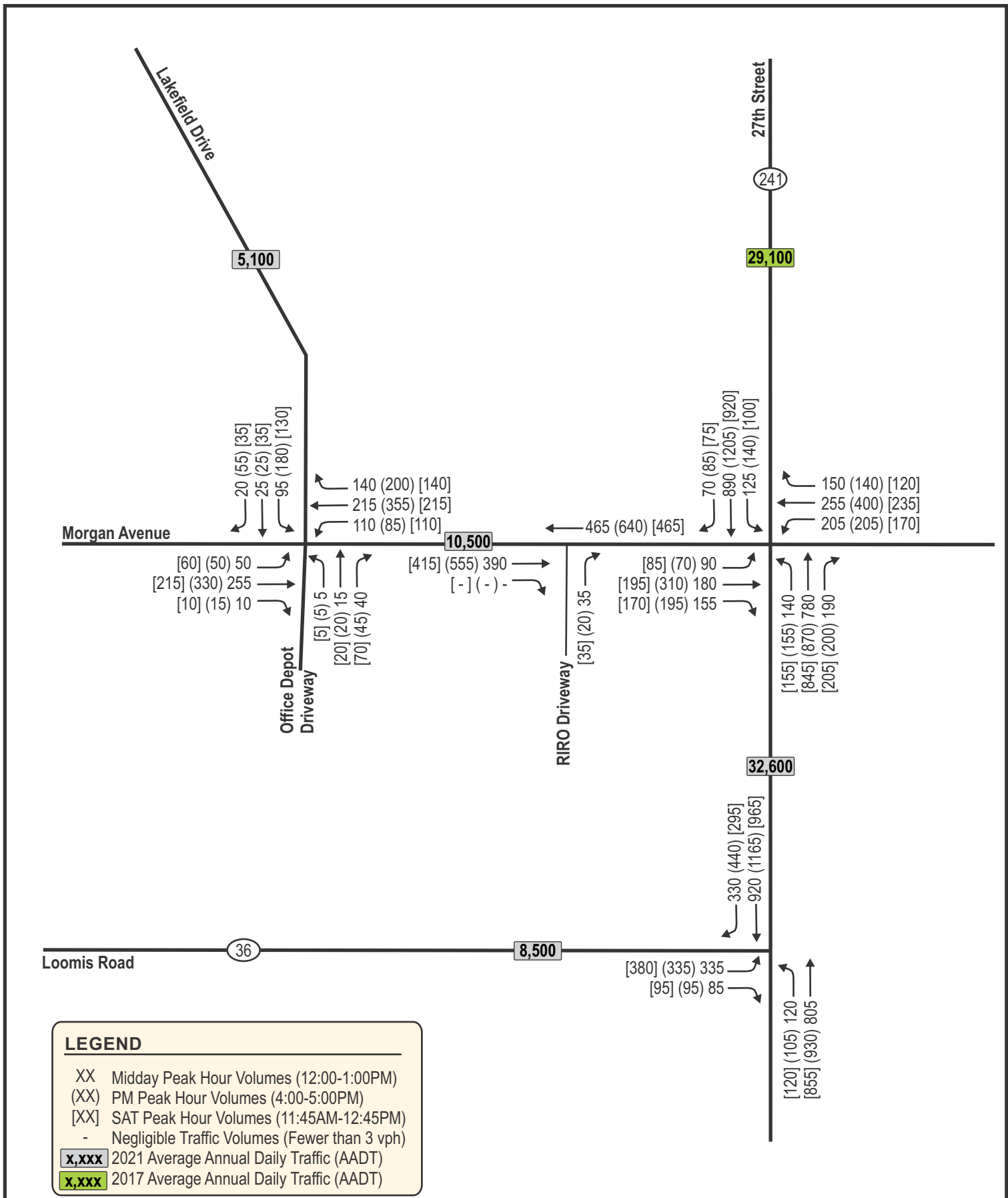
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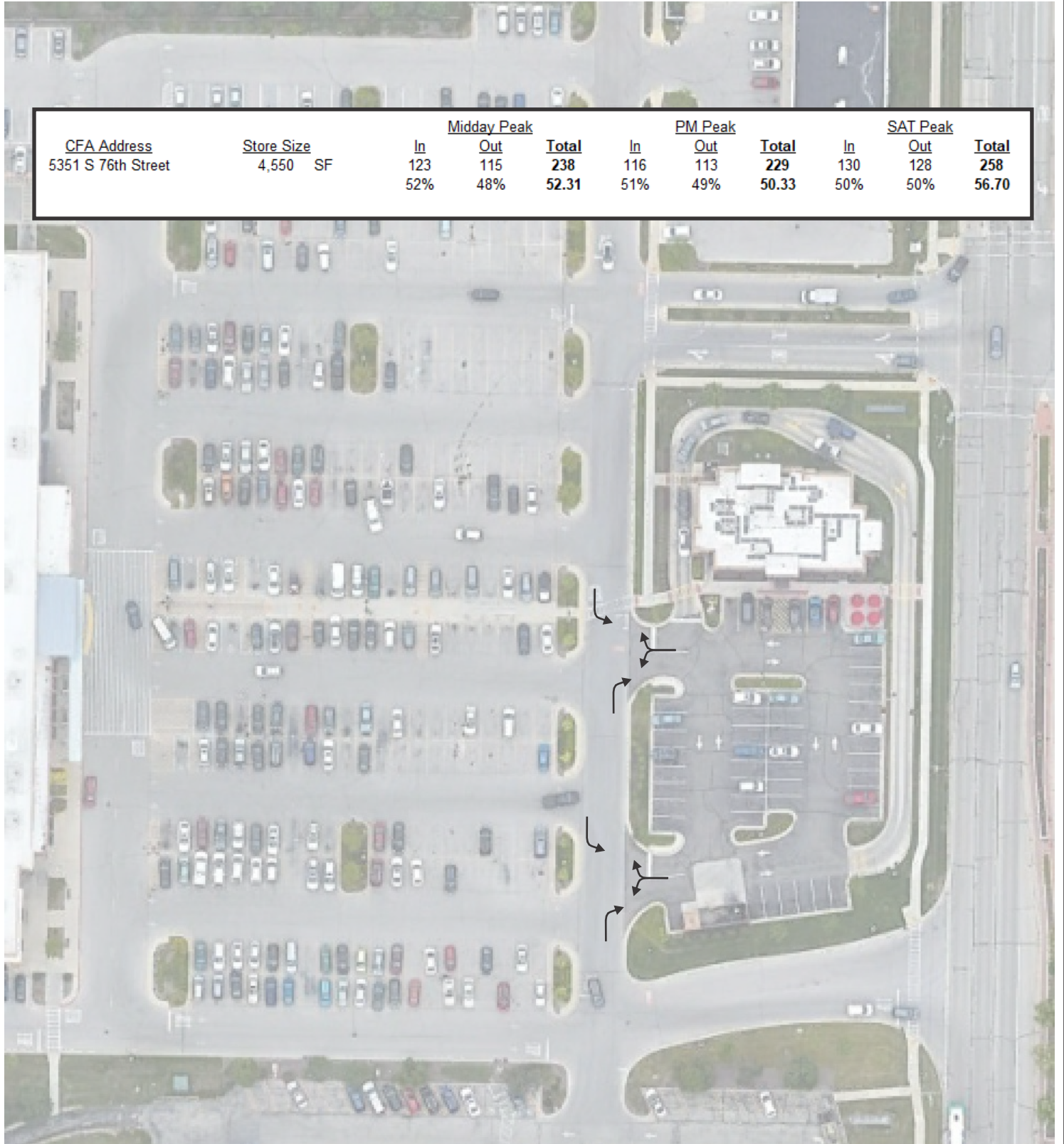
- Study Area Intersections



NOT TO SCALE







CFA Address	Store Size	Midday Peak			PM Peak			SAT Peak		
		In	Out	Total	In	Out	Total	In	Out	Total
5351 S 76th Street	4,550 SF	123	115	238	116	113	229	130	128	258
		52%	48%	52.31	51%	49%	50.33	50%	50%	56.70



CHAPTER III – PROPOSED DEVELOPMENT

PART A – DEVELOPMENT SITE PLAN

The 4,958 square foot Chick-Fil-A restaurant is proposed to be constructed on the site of the existing Zebb’s Family Restaurant, located on the west side of South 27th Street immediately south of West Morgan Avenue. The proposed Chick-Fil-A restaurant includes two drive-through lanes and provides seating for 68 patrons inside and another 12 patrons outside. Access to the site is proposed via cross access with the adjacent Office Depot full access roadway connection at the signalized intersection of West Morgan Avenue and Lakefield Drive and an additional right-out driveway onto West Morgan Avenue, immediately west of South 27th Street. The Office Depot lot also has additional access to the south along West Loomis Road that some patrons are expected to utilize. The development site plan is shown on [Exhibit 3-1](#). The Zebb’s Family Restaurant is currently operating on this site, but it will be razed to make room for the new Chick-Fil-A restaurant and drive-through area. The two existing site access points are expected to remain with two new full access driveways proposed off of the internal ring road to the Office Depot. The construction of the proposed Chick-Fil-A restaurant is expected to occur in a single development phase.

PART B – ON-SITE CIRCULATION/QUEUES

B1. Drive-Through Queues

The maximum total queue (both drive-through lanes) at the two existing Brookfield Chick-Fil-A restaurants was recorded to be in the 5-to-18 vehicle range (total of both lanes). The queue data collected was for queues backed up from the ordering kiosks. The maximum total kiosk queue by restaurant location and peak hour is shown in [Table 1](#).

Table 1. Existing Chick-Fil-A Drive-Through Queues

Location	PM Max Queue	SAT Max Queue
Brookfield Square	5	6
Capitol Drive	16	18

Note that at the Capitol Drive Chick-Fil-A, about 20-25 percent more entering trips were counted during the peak hours compared to the Brookfield Square Chick-Fil-A. This generally supports the greater number of cars counted in queue for the Capitol Drive Chick-Fil-A.

At its peak, the Capitol Drive queue maxed out at 18 cars from the ordering kiosks. According to the South 27th Street Chick-Fil-A site plan, there is space for 24 vehicles (12 per lane) to queue up from the driveway entrance along the frontage road to the ordering kiosks with additional queueing distance between the ordering kiosk and the pick-up window to accommodate an additional 14 vehicles. If the South 27th Street Chick-Fil-A turns out to be as busy as the Capitol Drive Chick-Fil-A during the peak hours, then there is expected to be adequate queue storage for drive-through vehicles without vehicles extending into or blocking the internal parking or circulating roadways.

B2. Site Circulation

Based on the site access, most traffic is expected to enter the site from the West Morgan Avenue intersection with West Lakefield Drive and all drive-through traffic is expected to exit the site from the right-out only driveway to West Morgan Avenue. Non-drive-through traffic is expected

to exit the site via a combination of the right-out only driveway and the Office Depot ring road access driveway. As described above, there is expected to be adequate queue storage for drive-through vehicles without vehicles extending into or blocking the internal parking spaces or circulating roadways.

Based on the Synchro outputs and confirmed via field observation, queues for the right-turn movements on the west approach of the West Morgan Avenue at South 27th Street are currently queueing up within the existing right-turn lane but do not back to the right-out driveway under existing traffic conditions, with the Zebb's Family Restaurant currently operating at the site. With the proposed Chick-Fil-A operating under Full build traffic conditions and with the recommended modifications implemented, queues for the eastbound right-turn lanes are expected to remain the same as the existing conditions and not extend beyond the right-out driveway. In addition, queues for the left-turn movements on the west approach of the West Morgan Avenue at South 27th Street are currently queueing up within the existing left-turn lane. With the proposed Chick-Fil-A operating under Full build traffic conditions, queues for the eastbound left-turn lanes are expected to increase by about 1 to 2 vehicles which has the potential to spill back (about 1 vehicle spill back expected) into the eastbound through lanes during the peak periods. Extending the left-turn lane is not possible due to the opposing left-turn lane at the adjacent Lakefield Drive intersection. However, with the addition of eastbound left-turn phasing as shown in the Alternate recommendations' scenario completed for this study, the queue lengths in the eastbound left-turn lane are expected to fall within the length of the existing left-turn lane.

PART C – DEVELOPMENT TRAFFIC VOLUMES

C1. Trip Generation

The traffic volumes expected to be generated by the proposed development were calculated based on driveway counts conducted in late-January at an existing Chick-Fil-A restaurant, located on South 76th Street in Greenfield, Wisconsin. The existing trips are summarized on [Exhibit 3-2A](#). As shown, the calculated rates were compared to the ITE national average rates for a drive-through restaurant. Since the local rates are higher than the ITE rates, the local rates were used for this study.

The calculated trip rates from the existing site were applied to the proposed 4,958-square foot Chick-Fil-A restaurant on South 27th Street. As shown on [Exhibit 3-2B](#), the proposed Chick-Fil-A restaurant is expected to generate about 260 trips (135 in/125 out) during the weekday midday peak hour, 250 trips (125 in/125 out) during the weekday evening peak hour and 280 trips (140 in/140 out) during the Saturday midday peak hour. The daily trips expected to be generated are 2,890 trips (1,445 in/1,445 out). Based on the Institute of Transportation Engineers (ITE) *Trip Generation Handbook*, about 50-percent of fast-food restaurant trips are pass-by trips. A pass-by trip is one that is already on the roadway system but diverts to the new development before continuing along on their original route. In addition, about 15-percent of the new trips are expected to be linked trips with the adjacent commercial businesses within the overall site.

After linked and pass-by trips reductions, the net new trips expected to be generated by the proposed Chick-Fil-A restaurant on South 27th Street is 100 trips (55 in/45 out) during the weekday midday peak hour, 100 trips (50 in/50 out) during the weekday evening peak hour and 120 trips (60 in/60 out) during the Saturday midday peak hour. The daily trips expected to be generated are 1,230 trips (615 in/615 out).

C2. Traffic Assignment

The net new trips were assigned to the study area intersections based on the trip distributions shown on the trip generation tables (also shown graphically on [Exhibit 3-3](#)) and as follows:

- 35-percent to/from the north on South 27th Street
- 30-percent to/from the south on South 27th Street
- 15-percent to/from the east on West Morgan Avenue
- 5-percent to/from the west on West Morgan Avenue
- 10-percent to/from the southwest on West Loomis Road
- 5-percent to/from the northwest on West Lakefield Drive

This trip distribution was based on existing traffic patterns at the study intersections. Pass-by trips were assigned to the proposed Chick-Fil-A driveways based on northbound and southbound traffic patterns along South 27th Street and eastbound/westbound traffic patterns along West Morgan Avenue.

The new trips were assigned to the study area intersections as follows:

- Chick-Fil-A New Trips: [Exhibit 3-4A](#)
- Chick-Fil-A Pass-by Trips: [Exhibit 3-4B](#)
- Chick-Fil-A Driveway Trips: [Exhibit 3-4C](#)

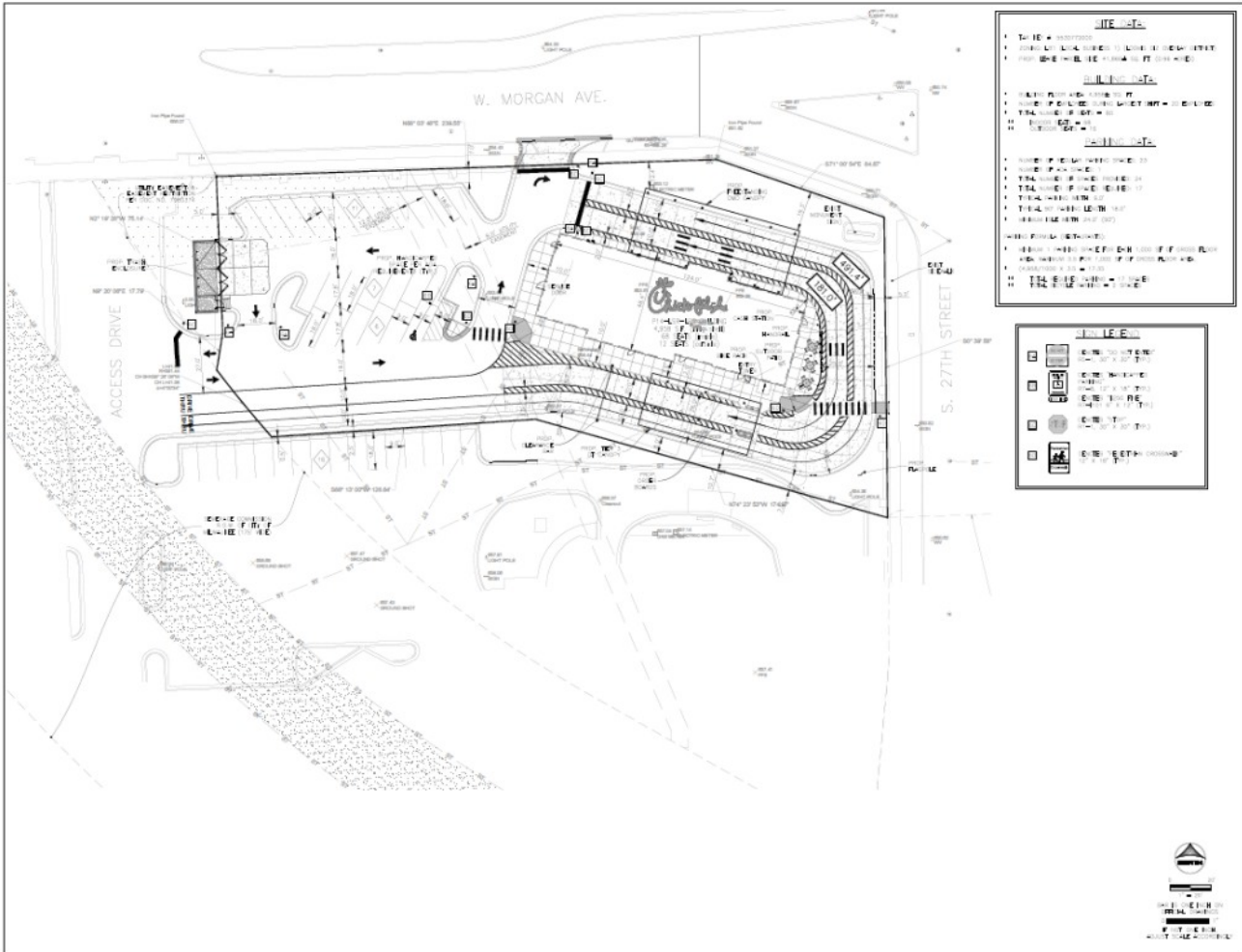
Under this condition, all traffic to/from West Loomis Road is expected to access the proposed site by via a travel path utilizing South 27th Street and West Morgan Avenue. However, since the site is located within a larger commercial parcel, it is possible that the traffic to/from West Loomis Road will utilize the driveway to the commercial site to “cut through” the parking lot to access the proposed restaurant. Therefore, a sensitivity analysis was also completed to account for the potential different traffic patterns. The new trips under this revised sensitivity analysis scenario were assigned to the study area intersections as follows:

- Chick-Fil-A New Trips (Sensitivity Analysis): [Exhibit 3-5A](#)
- Chick-Fil-A Pass-by Trips: [Exhibit 3-4B](#) (no change)
- Chick-Fil-A Driveway Trips (Sensitivity Analysis): [Exhibit 3-5C](#)

PART D – BUILD TRAFFIC VOLUMES

The Build traffic volumes were generated by adding the Chick-Fil-A new driveway trips, shown in [Exhibit 3-4C](#), to the existing traffic volumes from [Exhibit 2-3A](#). The Build traffic volumes are shown on [Exhibit 3-6](#).

The Build traffic (Sensitivity Analysis) volumes were generated by adding the Chick-Fil-A new driveway trips (Sensitivity Analysis), shown in [Exhibit 3-5C](#), to the existing traffic volumes from [Exhibit 2-3A](#). The Build traffic (Sensitivity Analysis) volumes are shown on [Exhibit 3-7](#).



- Site Notes**
- TO BE A REVISION
 - DRIVE DRIVE DRIVE TO DRIVE DRIVE DRIVE
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- Building Notes**
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- Site Elements**
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CHICK-FIL-A
 27TH & LOOMIS (WI) FSU
 2701 W. MORGAN AVENUE
 MILWAUKEE, WI 53221

FSR# 05405

PRELIMINARY

PROJECT NO.	05405
DATE	05-10-23
SCALE	AS SHOWN
DESIGNER	TADI
CLIENT	CHICK-FIL-A
PROJECT	CONCEPT PLAN
DATE	05-10-23
SCALE	CON-A



**EXHIBIT 3-1
 CONCEPTUAL SITE PLAN**

MILWAUKEE, WISCONSIN

**Exhibit 3-2A
Trip Generation Comparison Table**

Land Use	ITE Code	Proposed Size	Weekday Daily	Mid Peak *			PM Peak			SAT Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
Fast Food Restaurant with Drive-through Window (ITE data)	934	4,550 x 1,000 SF	2,130 (467.48)	105 (51%)	100 (49%)	205 (44.61)	80 (52%)	70 (48%)	150 (33.03)	130 (51%)	120 (49%)	250 (55.25)
Chick-Fil-A (Greenfield Site)	TADi	4,550 x 1,000 SF	2,650 (583.43)	125 (52%)	115 (48%)	240 (52.31)	115 (51%)	115 (49%)	230 (50.33)	130 (50%)	130 (50%)	260 (56.70)

* ITE Weekday AM peak trip generation used for weekday midday peak volumes. Greenfield daily volumes prorated based on comparison to actual volumes

Exhibit 3-2B
Trip Generation Table¹

Land Use	ITE Code	Proposed Size	Weekday Daily	Midday Peak			PM Peak			SAT Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
Fast Food Restaurant with Drive-through Window	TADi	4.958 x 1,000 SF	2,890 (583.43)	135 (52%)	125 (48%)	260 (52.31)	125 (51%)	125 (49%)	250 (50.33)	140 (50%)	140 (50%)	280 (56.70)
Total Trips			2,890	135	125	260	125	125	250	140	140	280
Minus Linked Trips	TADi	15%	-430	-20	-20	-40	-20	-20	-40	-20	-20	-40
Total Linked Trips²			-430	-20	-20	-40	-20	-20	-40	-20	-20	-40
Total Driveway Trips			2,460	115	105	220	105	105	210	120	120	240
Minus Pass-by Trips	TADi	50%/50%/50%	-1,230	-60	-60	-120	-55	-55	-110	-60	-60	-120
Total Pass-by Trips			-1,230	-60	-60	-120	-55	-55	-110	-60	-60	-120
Total New Trips			1,230	55	45	100	50	50	100	60	60	120

¹ Trip Gen based on actual traffic counts taken at the existing site located in Greenfield, Wisconsin (see Exhibit 4-3A), prorated based on proposed building size

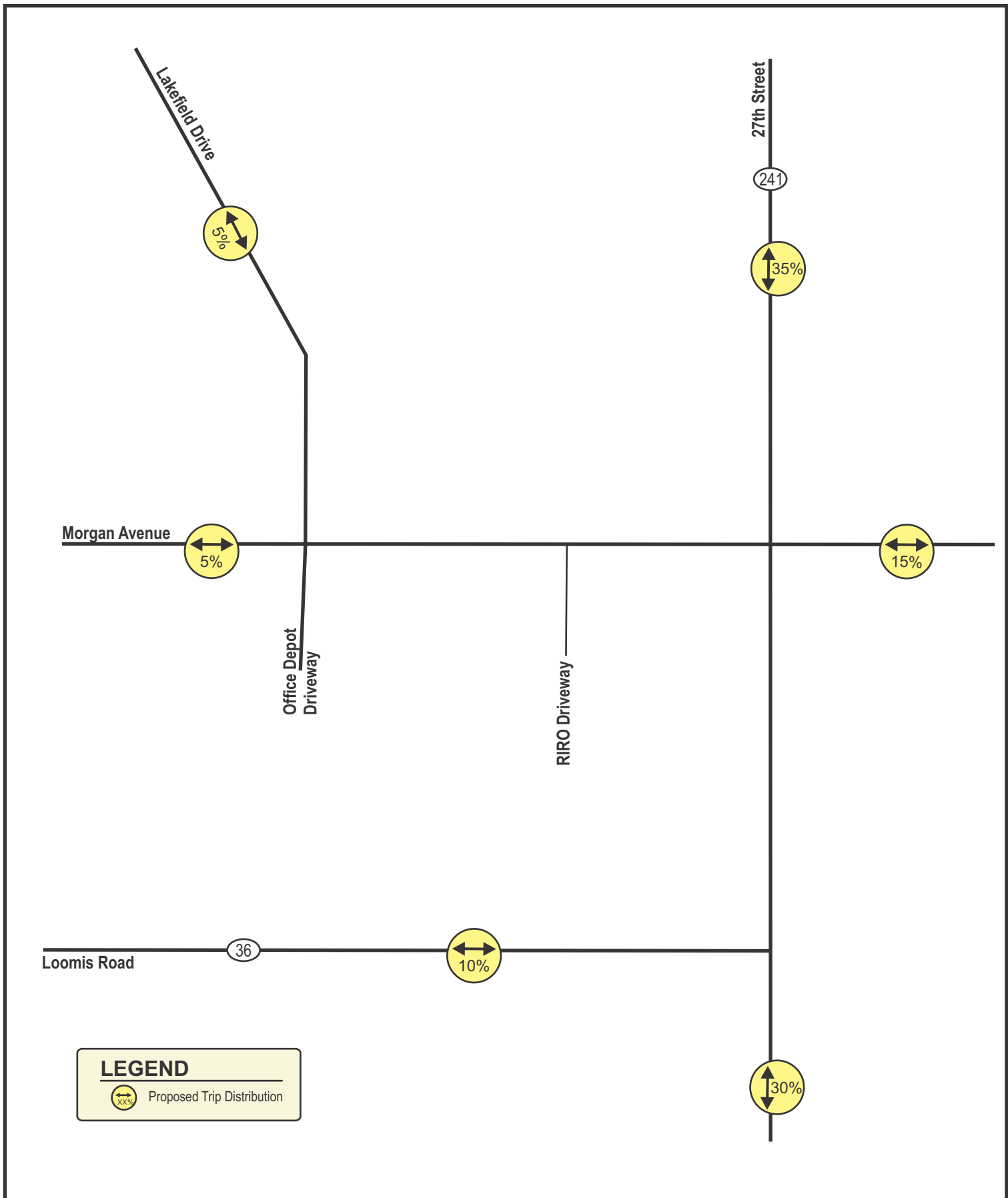
² Higher linked trips are expected, however, linked trips were limited to be about 15% (or less) of new trips to provide a conservative analysis.

TRIP DISTRIBUTION (New Trips)

North on 27th Street	35%	430	15	15	15	15	20	20
South on 27th Street	30%	370	15	15	15	15	15	20
North on Lakefield Drive	5%	60	5	5	5	5	5	5
East on Morgan Avenue	15%	185	10	5	5	5	10	5
West on Morgan Avenue	5%	60	5	0	5	5	5	5
South on Loomis Road	10%	125	5	5	5	5	5	5
	100%	1230	55	45	50	50	60	60

TRIP DISTRIBUTION (Pass-by Trips)

North on 27th Street	35% (35%) {35%}	20	20	20	20	20	20
South on 27th Street	30% (30%) {30%}	20	20	15	15	20	20
East on Morgan Avenue	20% (20%) {20%}	10	10	10	10	10	10
West on Morgan Avenue	15% (15%) {15%}	10	10	10	10	10	10
		60	60	55	55	60	60

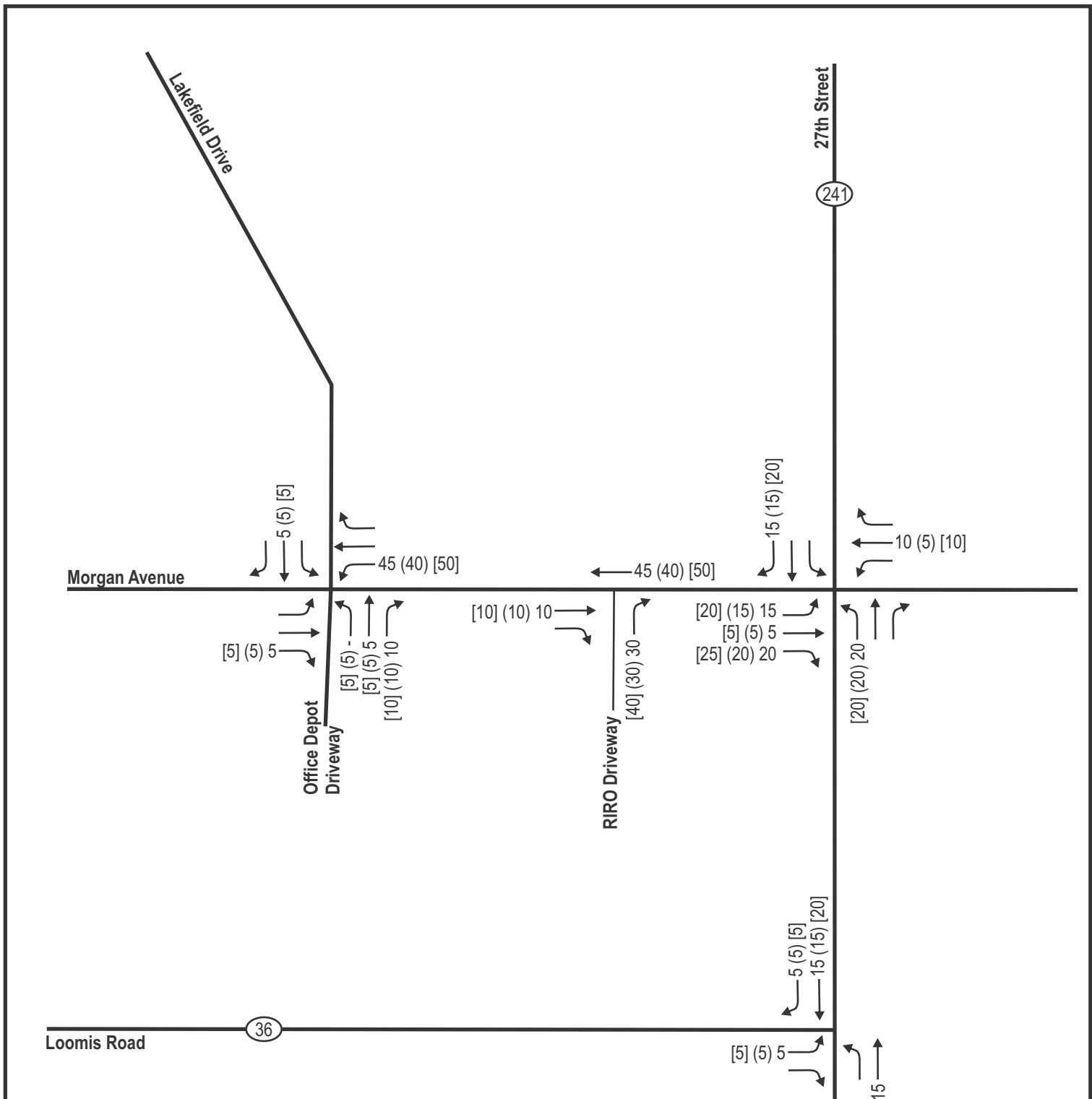


LEGEND

Proposed Trip Distribution



NOT TO SCALE

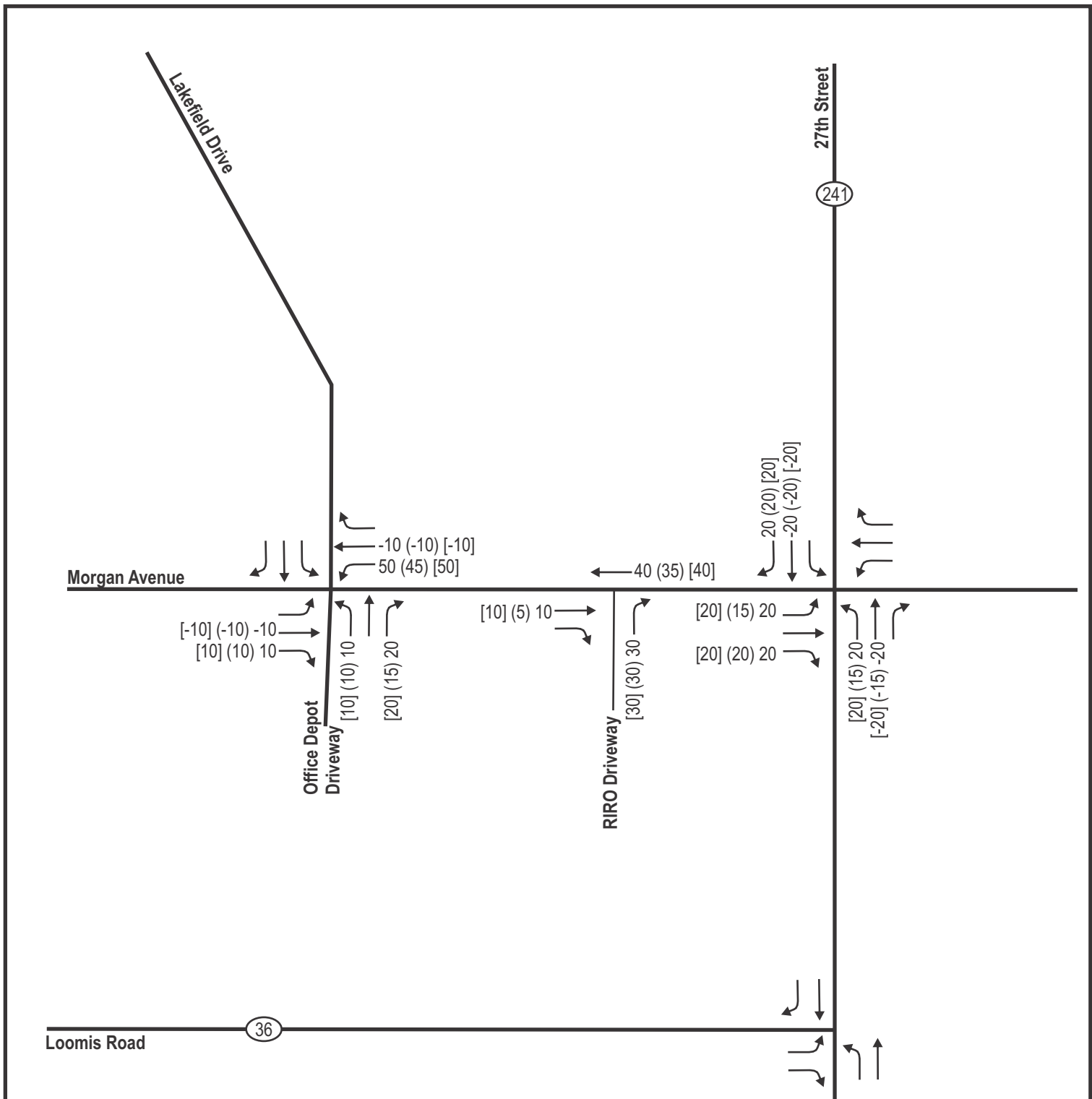


LEGEND

- XX Midday Peak Hour Volumes (12:00-1:00PM)
- (XX) PM Peak Hour Volumes (4:00-5:00PM)
- [XX] SAT Peak Hour Volumes (11:45AM-12:45PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



EXHIBIT 3-4A
ON-SITE NEW TRIPS
MILWAUKEE, WISCONSIN



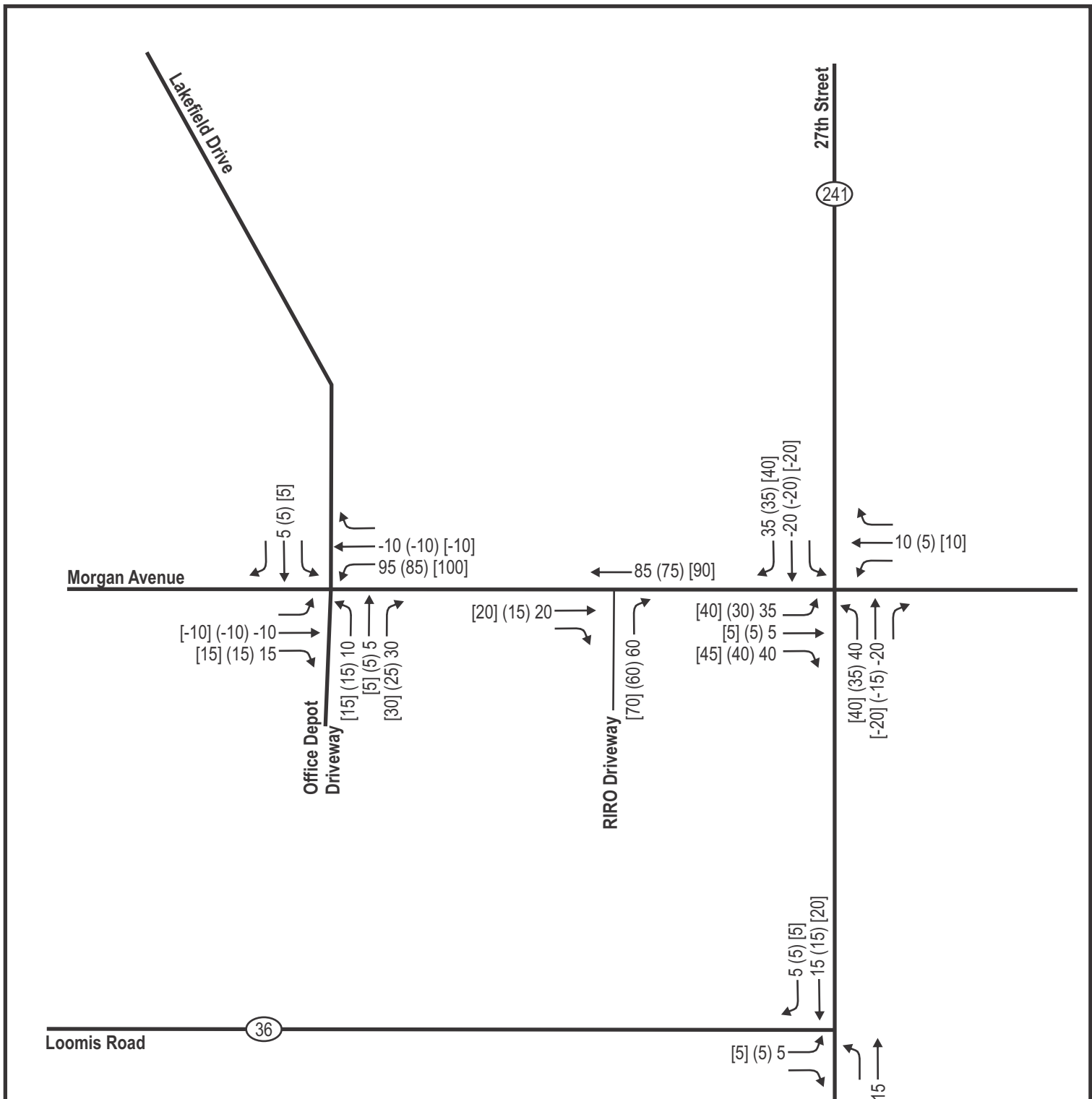
LEGEND

- XX AM Peak Hour Volumes (x:xx - x:xx AM)
- (XX) PM Peak Hour Volumes (x:xx - x:xx PM)
- [XX] SAT Peak Hour Volumes (x:xx - x:xx PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



**EXHIBIT 3-4B
ON-SITE PASS-BY TRIPS**

MILWAUKEE, WISCONSIN



LEGEND

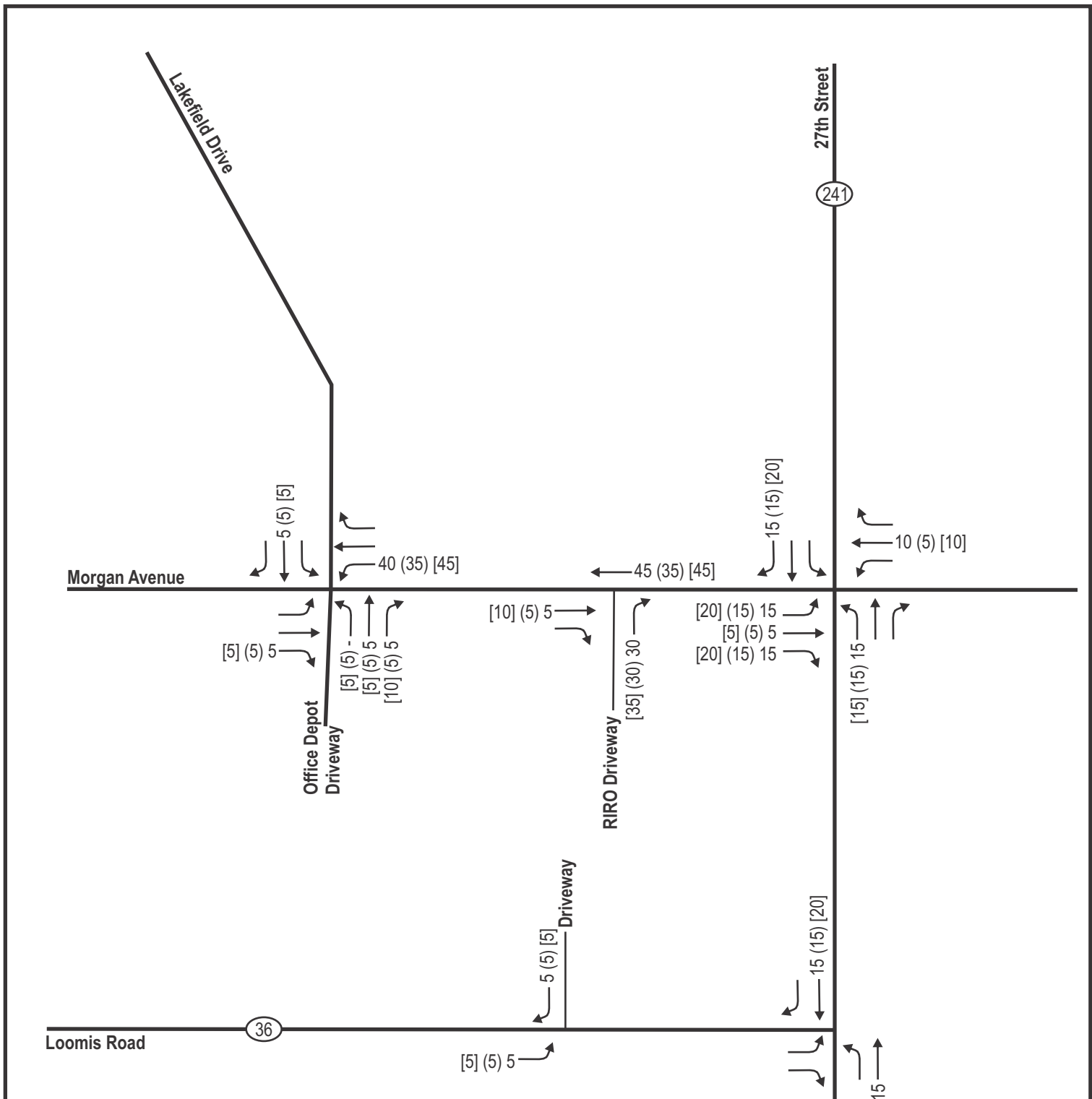
- XX Midday Peak Hour Volumes (12:00-1:00PM)
- (XX) PM Peak Hour Volumes (4:00-5:00PM)
- [XX] SAT Peak Hour Volumes (11:45AM-12:45PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



NOT TO SCALE

**EXHIBIT 3-4C
ON-SITE DRIVEWAY TRIPS**

MILWAUKEE, WISCONSIN

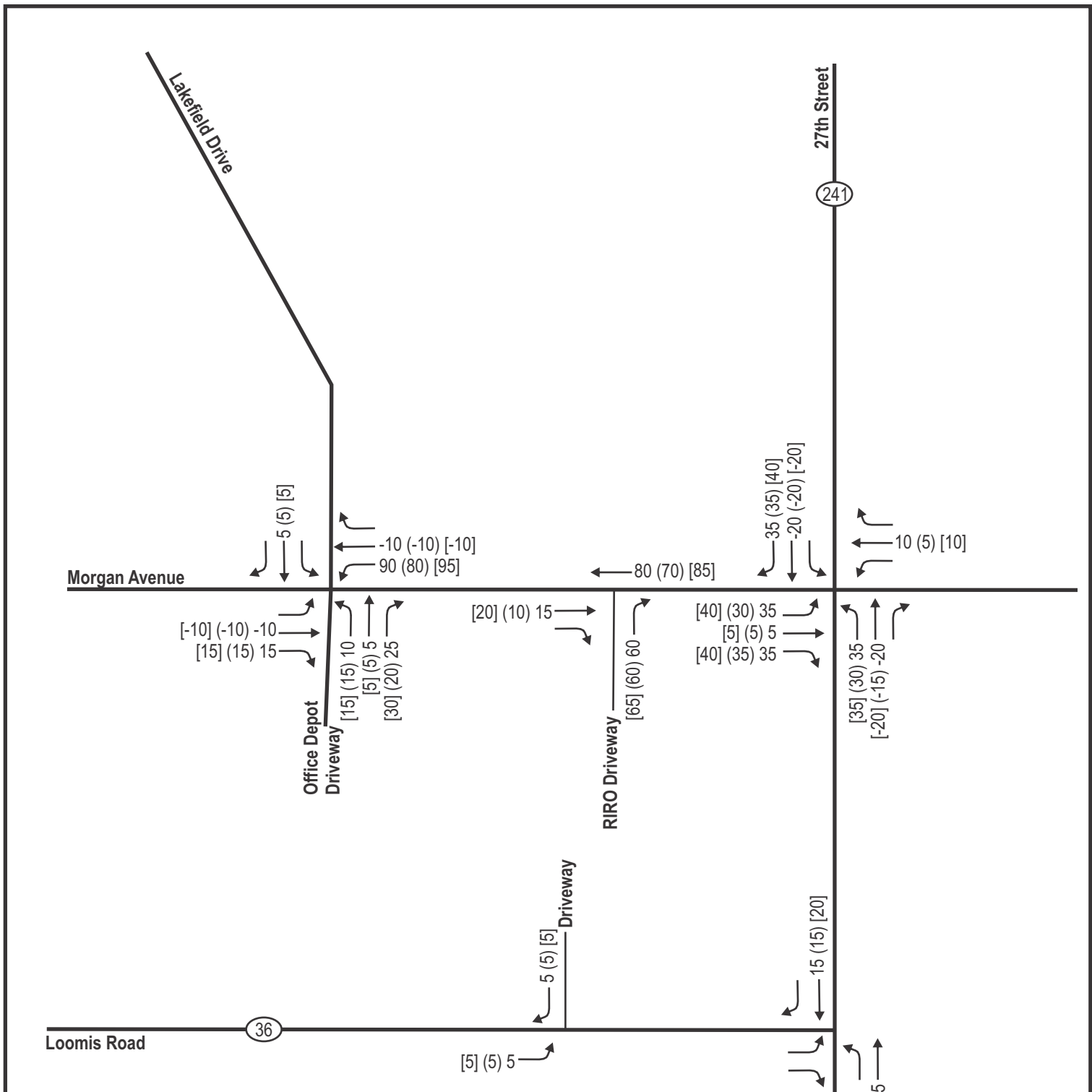


LEGEND

- XX Midday Peak Hour Volumes (12:00-1:00PM)
- (XX) PM Peak Hour Volumes (4:00-5:00PM)
- [XX] SAT Peak Hour Volumes (11:45AM-12:45PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



EXHIBIT 3-5A
ON-SITE NEW TRIPS
SENSITIVITY ANALYSIS
MILWAUKEE, WISCONSIN



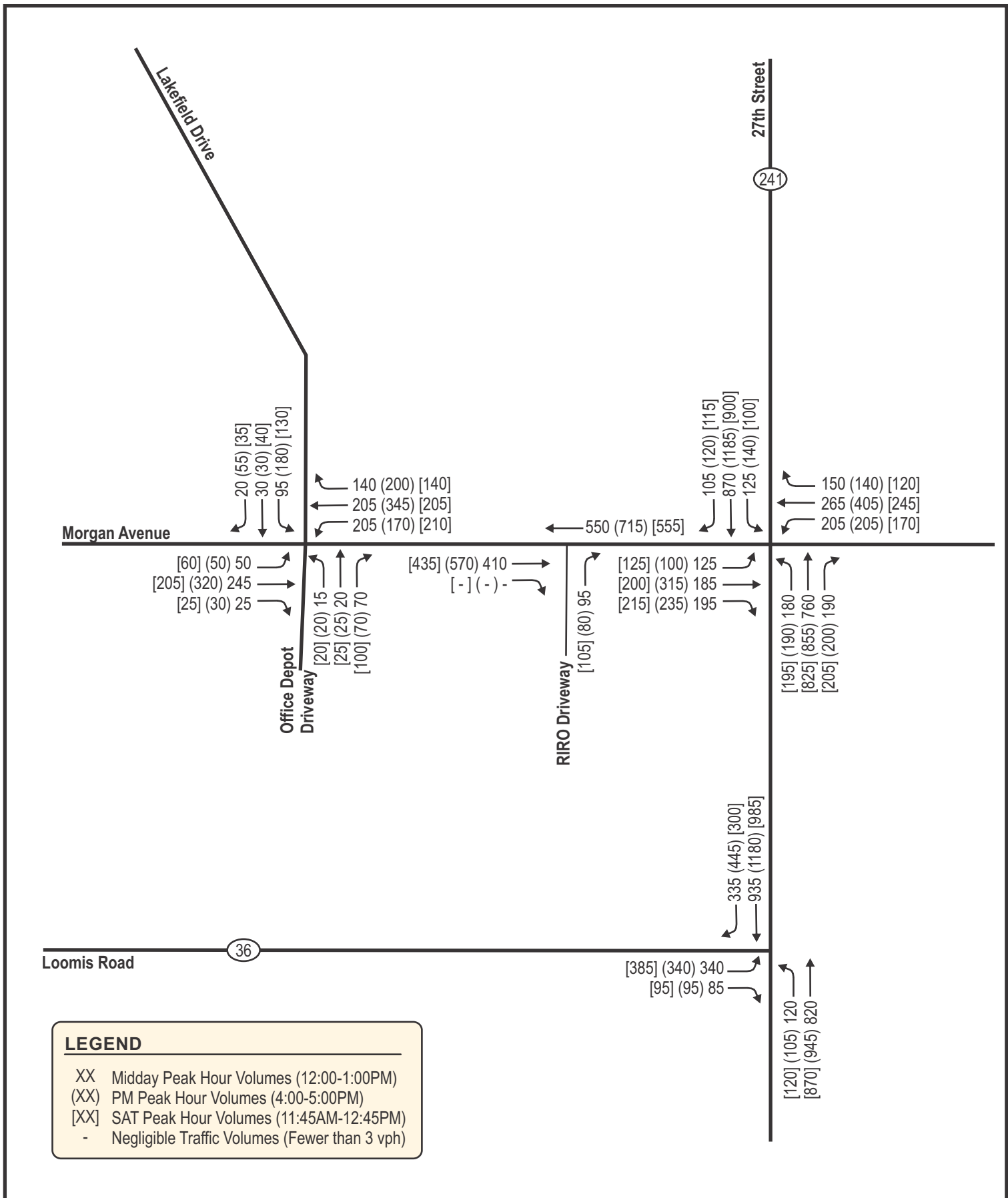
LEGEND

- XX Midday Peak Hour Volumes (12:00-1:00PM)
- (XX) PM Peak Hour Volumes (4:00-5:00PM)
- [XX] SAT Peak Hour Volumes (11:45AM-12:45PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



**EXHIBIT 3-5C
ON-SITE DRIVEWAY TRIPS
SENSITIVITY ANALYSIS**

MILWAUKEE, WISCONSIN



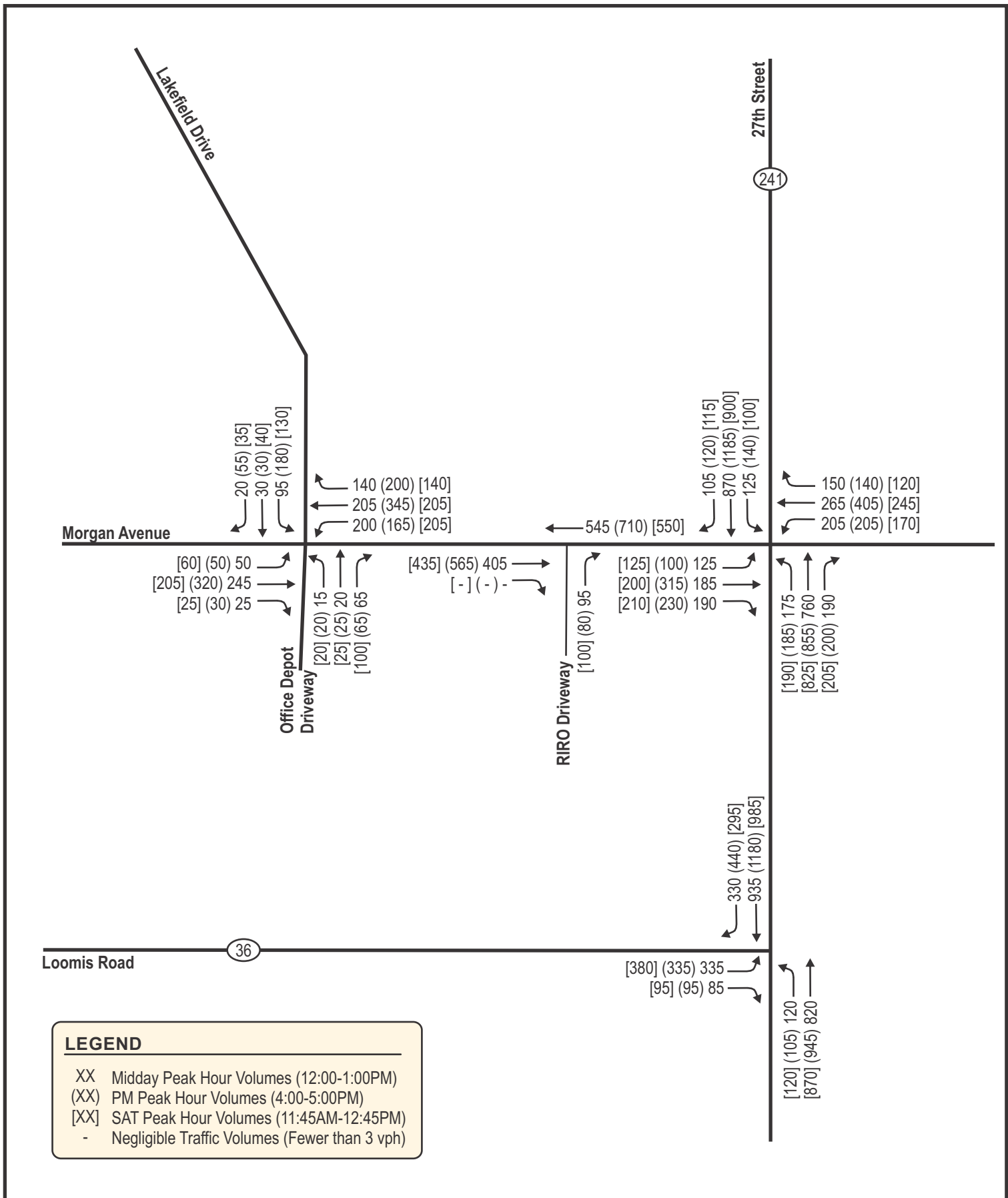
LEGEND

- XX Midday Peak Hour Volumes (12:00-1:00PM)
- (XX) PM Peak Hour Volumes (4:00-5:00PM)
- [XX] SAT Peak Hour Volumes (11:45AM-12:45PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



**EXHIBIT 3-6
FULL BUILD TRAFFIC VOLUMES**

MILWAUKEE, WISCONSIN



LEGEND

- XX Midday Peak Hour Volumes (12:00-1:00PM)
- (XX) PM Peak Hour Volumes (4:00-5:00PM)
- [XX] SAT Peak Hour Volumes (11:45AM-12:45PM)
- Negligible Traffic Volumes (Fewer than 3 vph)



**EXHIBIT 3-7
FULL BUILD TRAFFIC VOLUMES
SENSITIVITY ANALYSIS**

MILWAUKEE, WISCONSIN

CHAPTER IV – CAPACITY ANALYSIS

PART A – LEVEL OF SERVICE DEFINITIONS

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual* (HCM), 6th Edition. Intersection operation is defined by “level of service.” Level of service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A,’ to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D was used to define acceptable peak hour operating conditions. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

PART B – EXISTING CONDITIONS

B1. Existing Peak Hour Traffic Operations

The existing traffic volumes were evaluated at the study area intersections using the existing geometrics and traffic control. The existing traffic LOS and queues are shown on [Exhibit 4-1](#). As shown, all turning movements at the study intersections are currently operating acceptably at LOS D or better during the peak hours. The existing traffic analysis worksheets from Synchro are located in [Appendix B](#).

PART C – BUILD TRAFFIC ANALYSIS

C1. Build Peak Hour Traffic Operations – No Modifications

The Build traffic volumes were evaluated at the study intersections using the same geometrics and traffic control as evaluated for the existing traffic volumes. The Build traffic LOS and queues are shown on [Exhibit 4-2](#). The Build (Sensitivity Analysis) traffic LOS and queues are shown on [Exhibit 4-3](#). As shown, regardless of the new trip distribution scenario, all turning movements at

the study intersections are expected to continue to operate acceptably at LOS D or better during the peak hours. The Build traffic and Build (Sensitivity Analysis) traffic analysis worksheets from Synchro are located in [Appendix C](#).

C2. Build Peak Hour Traffic Operations – With Modifications

Modifications are recommended to accommodate the full build traffic volumes (with development) as summarized in *Chapter V – Recommendations and Conclusion*.

The Build traffic LOS and queues with the recommended modifications are shown on [Exhibit 4-4](#). This scenario assumes a highest volume situation which doesn't account for the potential "cut through" traffic as analyzed in the Sensitivity Analysis scenario performed for this study. As shown, all movements are expected to continue to operate acceptably at LOS D or better during the peak hours with modifications. The Build traffic analysis with modifications worksheets from Synchro are located in [Appendix D](#).

The Build traffic LOS and queues with the Alternate recommended modifications are shown on [Exhibit 4-5](#). This scenario also assumes a highest volume situation which doesn't account for the potential "cut through" traffic as analyzed in the Sensitivity Analysis scenario performed for this study. However, this scenario assumes modifications to the left-turn phasing at the South 27th Street intersection with West Morgan Avenue. As shown, all movements are expected to continue to operate acceptably at LOS D or better during the peak hours with Alternate modifications noting that with the addition of eastbound left-turn phasing, the queue lengths in the eastbound left-turn lane are expected to fall within the length of the existing left-turn lane. The Build traffic analysis with Alternate modifications worksheets from Synchro are located in [Appendix E](#).

Table 4-1
Existing Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙	
Node 100: Morgan Avenue & Lakefield Drive/Office Depot D/W ¹ Traffic Signal Control	MID	Lanes->	1	2	1	1	2	1	2	1	2	1			
		LOS	A	B	B	A	B	B	D	D	D	D		B	
		Delay	9	13	12	5	11	12	40	43	40	37		17	
	Queue	30'	90'	25'	50'	70'	95'	35'	55'	75'	25'				
	PM	LOS	B	B	B	B	C	C	D	D	D	C		C	
		Delay	11	16	14	19	29	30	38	40	38	34		26	
		Queue	35'	115'	25'	65'	150'	185'	40'	60'	110'	45'			
	SAT	LOS	B	B	B	A	B	B	D	D	D	D		B	
		Delay	10	14	13	6	11	12	37	41	40	37		19	
Queue		40'	80'	25'	55'	65'	95'	35'	80'	90'	35'				
Node 200: Morgan Avenue & Right-in/Right-out D/W One-Way Stop Control	MID	Lanes->	-	2			3		-	1		-			
		LOS	-	*			*		-	A		-		A	
		Delay	-	*			*		-	9		-		1	
	Queue	-	*			*		-	25'		-				
	PM	LOS	-	*			*		-	B		-		A	
		Delay	-	*			*		-	10		-		1	
		Queue	-	*			*		-	25'		-			
	SAT	LOS	-	*			*		-	A		-		A	
		Delay	-	*			*		-	9		-		1	
Queue		-	*			*		-	25'		-				
Node 300: 27th Street & Morgan Avenue Traffic Signal Control	MID	Lanes->	1	2	1	1	3	2	3	1	2	3			
		LOS	D	D	D	C	C	B	A	A	B	B		B	
		Delay	40	38	39	28	24	12	7	7	14	13		17	
	Queue	110'	90'	105'	145'	90'	25'	70'	40'	35'	150'				
	PM	LOS	D	D	D	C	C	B	A	A	B	B		B	
		Delay	40	40	40	31	24	17	7	7	15	15		18	
		Queue	80'	130'	115'	145'	115'	50'	80'	45'	45'	215'			
	SAT	LOS	D	D	D	C	C	B	A	A	B	B		B	
		Delay	39	38	39	27	23	12	7	6	14	13		16	
Queue		100'	95'	115'	115'	75'	25'	75'	45'	30'	150'				
Node 400: 27th Street & Loomis Road Traffic Signal Control	MID	Lanes->	2	-	1		-	2	3		3		1		
		LOS	D	-	C		-	A	A		B		A	B	
		Delay	37	-	33		-	5	5		12		0	16	
	Queue	135'	-	60'		-	25'	80'		190'		'			
	PM	LOS	D	-	D		-	A	A		B		A	B	
		Delay	40	-	36		-	7	4		16		0	15	
		Queue	130'	-	65'		-	25'	95'		250'		'		
	SAT	LOS	D	-	C		-	A	A		C		A	B	
		Delay	41	-	34		-	8	5		23		0	19	
Queue		155'	-	65'		-	25'	95'		210'		'			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

U-Turns, if any, are included in the left-turn volume.

¹ HCM 6th Edition methodology does not support shared lanes on north approach, HCM 2000 results shown at this intersection.

Table 4-2
Full Build Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙	
Node 100: Morgan Avenue & Lakefield Drive/Office Depot D/W ¹ <i>Traffic Signal Control</i>	MID	Lanes->	1	2	1	1	2	1	2	1	2	1	1		B 19
		LOS	B	B	B	A	B	B	D	D	D	D	D		
		Delay	12	17	15	8	12	13	38	41	40	37			
	PM	Queue	35'	100'	25'	120'	70'	105'	50'	80'	80'	25'		C 26	
		LOS	B	B	B	B	C	C	D	D	D	C			
		Delay	14	19	17	16	26	28	38	41	37	34			
	SAT	Queue	35'	125'	25'	115'	145'	185'	55'	80'	110'	45'		C 20	
		LOS	B	B	B	A	B	B	D	D	D	D			
		Delay	13	17	16	7	12	12	37	44	40	37			
	Node 200: Morgan Avenue & Right-in/Right-out D/W <i>One-Way Stop Control</i>	MID	Lanes->	-	2			3		-	1		-		A 1
			LOS	-	*			*		-	B		-		
			Delay	-	*			*		-	10		-		
PM		Queue	-	*			*		-	25'		-		A 1	
		LOS	-	*			*		-	B		-			
		Delay	-	*			*		-	11		-			
SAT		Queue	-	*			*		-	25'		-		A 1	
		LOS	-	*			*		-	B		-			
		Delay	-	*			*		-	11		-			
Node 300: 27th Street & Morgan Avenue <i>Traffic Signal Control</i>	MID	Lanes->	1	2	1	1	3	2	3	1	2	3		B 15	
		LOS	D	D	D	C	C	A	A	A	B	B			
		Delay	42	38	39	28	24	3	1	1	11	13			
	PM	Queue	175'	90'	130'	145'	90'	40'	70'	40'	35'	155'		B 19	
		LOS	D	D	D	C	C	B	A	A	B	B			
		Delay	41	40	41	31	24	19	7	7	15	15			
	SAT	Queue	135'	130'	140'	145'	120'	105'	80'	45'	45'	215'		B 17	
		LOS	D	D	D	C	C	B	A	A	B	B			
		Delay	41	38	39	27	24	13	7	6	14	13			
Node 400: 27th Street & Loomis Road <i>Traffic Signal Control</i>	MID	Lanes->	2	-	1		-	2	3		3	1		B 18	
		LOS	D	-	D		-	A	A		C	A			
		Delay	40	-	36		-	7	4		22	0			
	PM	Queue	135'	-	60'		-	25'	85'		195'	'		B 15	
		LOS	D	-	D		-	A	A		B	A			
		Delay	41	-	36		-	7	5		17	0			
	SAT	Queue	135'	-	65'		-	25'	100'		255'	'		B 19	
		LOS	D	-	C		-	A	A		C	A			
		Delay	41	-	34		-	8	5		23	0			
SAT	Queue	160'	-	65'		-	25'	95'		215'	'				

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

U-Turns, if any, are included in the left-turn volume.

¹ HCM 6th Edition methodology does not support shared lanes on north approach, HCM 2000 results shown at this intersection.

Table 4-3
Full Build (Sensitivity Analysis) Traffic Peak Hour Operating Conditions
With Existing Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach												I/S LOS & Delay
			Eastbound			Westbound			Northbound			Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	↙	
Node 100: Morgan Avenue & Lakefield Drive/Office Depot D/W ¹ <i>Traffic Signal Control</i>	MID	Lanes->	1	2	1	1	2	1	2	1	2	1	1	1	B 19
		LOS	B	B	B	A	B	B	D	D	D	D	D		
		Delay	12	17	15	8	12	13	38	41	40	37	37		
	PM	Queue	35'	100'	25'	115'	70'	105'	50'	80'	80'	25'	25'	C 26	
		LOS	B	B	B	B	C	C	D	D	D	C	C		
		Delay	13	19	17	16	27	28	39	41	37	34	34		
	SAT	Queue	35'	125'	25'	110'	145'	185'	60'	75'	110'	45'	45'	C 20	
		LOS	B	B	B	A	B	B	D	D	D	D	D		
		Delay	13	17	16	7	12	13	37	44	40	37	37		
	Node 200: Morgan Avenue & Right-in/Right-out D/W <i>One-Way Stop Control</i>	MID	Lanes->	-	2			3		-	1		-		A 1
			LOS	-	*			*		-	B		-		
			Delay	-	*			*		-	10		-		
PM		Queue	-	*			*		-	25'		-		A 1	
		LOS	-	*			*		-	B		-			
		Delay	-	*			*		-	11		-			
SAT		Queue	-	*			*		-	25'		-		A 1	
		LOS	-	*			*		-	B		-			
		Delay	-	*			*		-	11		-			
Node 300: 27th Street & Morgan Avenue <i>Traffic Signal Control</i>		MID	Lanes->	1	2	1	1	3	2	3	1	2	3		B 15
			LOS	D	D	D	C	C	A	A	A	B	B	B	
			Delay	42	38	39	28	24	3	1	1	11	13	13	
	PM	Queue	175'	90'	125'	145'	90'	35'	70'	40'	35'	155'	155'	B 19	
		LOS	D	D	D	C	C	B	A	A	B	B	B		
		Delay	41	40	41	31	24	19	7	7	15	15	15		
	SAT	Queue	135'	130'	135'	145'	120'	105'	80'	45'	45'	215'	215'	B 17	
		LOS	D	D	D	C	C	B	A	A	B	B	B		
		Delay	41	38	39	27	24	13	7	6	14	13	13		
	Node 400: 27th Street & Loomis Road <i>Traffic Signal Control</i>	MID	Lanes->	2	-	1		-	2	3		3	1		B 18
			LOS	D	-	D		-	A	A		C	A	A	
			Delay	40	-	36		-	7	4		22	0	0	
PM		Queue	135'	-	60'		-	25'	85'		195'	'	'	B 15	
		LOS	D	-	D		-	A	A		B	A	A		
		Delay	40	-	36		-	7	5		17	0	0		
SAT		Queue	130'	-	65'		-	25'	95'		255'	'	'	B 19	
		LOS	D	-	C		-	A	A		C	A	A		
		Delay	41	-	34		-	8	5		23	0	0		
SAT		Queue	155'	-	65'		-	25'	95'		215'	'	'	B 19	
		LOS	D	-	C		-	A	A		C	A	A		
		Delay	41	-	34		-	8	5		23	0	0		

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.

Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.

U-Turns, if any, are included in the left-turn volume.

¹ HCM 6th Edition methodology does not support shared lanes on north approach, HCM 2000 results shown at this intersection.

Table 4-4
Full Build Traffic Peak Hour Operating Conditions
With Modified Geometrics and Traffic Control

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach											I/S LOS & Delay
			Eastbound			Westbound			Northbound		Southbound			
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓	
Node 100: Morgan Avenue & Lakefield Drive/Office Depot D/W <i>Traffic Signal Control</i>		<i>Lanes-></i>	1	2	1	1	2	1	2	1	1	2	1	
	MID	LOS	A	C	B	A	B	B	D	D	D	D	C	B
		Delay	5	20	18	5	12	12	35	37	41	35	34	18
		Queue	25'	60'	25'	25'	30'	30'	45'	75'	100'	40'	25'	
	PM	LOS	A	C	C	A	B	B	C	C	D	C	C	C
		Delay	9	26	23	5	16	16	30	31	38	29	30	22
		Queue	25'	90'	25'	45'	75'	55'	45'	65'	155'	35'	40'	
	SAT	LOS	A	C	C	A	B	B	C	D	D	C	C	C
		Delay	7	22	20	5	14	15	33	35	40	33	32	20
Queue		25'	55'	25'	90'	50'	55'	50'	95'	120'	45'	30'		
Node 200: Morgan Avenue & Right-in/Right-out D/W <i>One-Way Stop Control</i>		<i>Lanes-></i>	-	2		3			-	1				
	MID	LOS	-	*		*			-	B				A
		Delay	-	*		*			-	10				1
		Queue	-	*		*			-	25'				
	PM	LOS	-	*		*			-	B				A
		Delay	-	*		*			-	11				1
		Queue	-	*		*			-	25'				
	SAT	LOS	-	*		*			-	B				A
		Delay	-	*		*			-	11				1
Queue		-	*		*			-	25'					
Node 300: 27th Street & Morgan Avenue <i>Traffic Signal Control</i>		<i>Lanes-></i>	1	2	1	1	3		2	3	1	2	3	
	MID	LOS	D	D	D	C	C		A	A	A	B	B	B
		Delay	42	38	39	28	24		3	1	1	11	13	15
		Queue	150'	70'	95'	145'	90'		45'	105'	60'	35'	155'	
	PM	LOS	D	D	D	C	C		A	A	A	B	B	B
		Delay	41	40	41	31	24		7	1	1	12	15	16
		Queue	130'	100'	105'	145'	120'		105'	110'	60'	45'	215'	
	SAT	LOS	D	D	D	C	C		A	A	A	B	B	B
		Delay	41	38	40	27	24		3	1	1	11	13	14
Queue		140'	75'	110'	115'	80'		80'	110'	65'	30'	155'		
Node 400: 27th Street & Loomis Road <i>Traffic Signal Control</i>		<i>Lanes-></i>	2	-	1				2	3		3	1	
	MID	LOS	D	-	D				A	A		B	A	B
		Delay	40	-	36				6	4		16	0	15
		Queue	135'	-	60'				25'	85'		80'	'	
	PM	LOS	D	-	D				A	A		A	A	A
		Delay	41	-	36				5	5		1	0	8
		Queue	135'	-	65'				25'	100'		80'	'	
	SAT	LOS	D	-	C				A	A		A	A	A
		Delay	41	-	34				5	5		1	0	9
Queue		160'	-	65'				25'	95'		90'	'		

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.
 Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.
 U-Turns, if any, are included in the left-turn volume.

**Table 4-5
Full Build Traffic Peak Hour Operating Conditions
With Alternate Modified Geometrics and Traffic Control**

Intersection	Peak Hour	Metric	Level of Service (LOS) per Movement by Approach											I/S LOS & Delay	
			Eastbound			Westbound			Northbound		Southbound				
			↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓		↙
Node 100: Morgan Avenue & Lakefield Drive/Office Depot D/W <i>Traffic Signal Control</i>		Lanes->	1	2	1	1	2	1		2	1	1	2	1	
	MID	LOS	A	C	B	A	B	B		D	D	D	D	C	
		Delay	5	20	18	5	12	12		35	37	41	35	34	
		Queue	25'	60'	25'	25'	25'	25'		45'	75'	100'	40'	25'	
	PM	LOS	A	C	C	A	B	B		C	C	D	C	C	
		Delay	9	26	23	5	16	16		30	31	38	29	30	
		Queue	25'	90'	25'	45'	65'	55'		45'	65'	155'	35'	40'	
	SAT	LOS	A	C	C	A	B	B		C	D	D	C	C	
		Delay	7	22	20	5	14	15		33	35	40	33	32	
Queue		25'	55'	25'	30'	35'	35'		50'	95'	120'	45'	30'		
Node 200: Morgan Avenue & Right-in/Right-out D/W <i>One-Way Stop Control</i>		Lanes->	-	2			3			-	1		-		
	MID	LOS	-	*			*			-	B		-		
		Delay	-	*			*			-	10		-		
		Queue	-	*			*			-	25'		-		
	PM	LOS	-	*			*			-	B		-		
		Delay	-	*			*			-	11		-		
		Queue	-	*			*			-	25'		-		
	SAT	LOS	-	*			*			-	B		-		
		Delay	-	*			*			-	11		-		
Queue		-	*			*			-	25'		-			
Node 300: 27th Street & Morgan Avenue <i>Traffic Signal Control</i>		Lanes->	1	2	1	1	3		2	3	1	2	3		
	MID	LOS	C	D	D	C	C		A	A	A	B	B		
		Delay	30	38	39	30	34		3	1	1	11	13		
		Queue	45'	70'	95'	145'	115'		45'	105'	60'	35'	150'		
	PM	LOS	C	D	D	C	D		A	A	A	B	B		
		Delay	30	40	41	32	35		7	1	1	12	15		
		Queue	55'	100'	105'	145'	145'		105'	110'	60'	45'	215'		
	SAT	LOS	C	D	D	C	C		A	A	A	B	B		
		Delay	30	38	40	28	33		3	1	1	11	13		
Queue		50'	75'	110'	115'	100'		80'	110'	65'	30'	155'			
Node 400: 27th Street & Loomis Road <i>Traffic Signal Control</i>		Lanes->	2	-	1				2	3		3	1		
	MID	LOS	D	-	D				A	A		B	A		
		Delay	40	-	36				6	4		16	0		
		Queue	135'	-	60'				25'	85'		80'	'		
	PM	LOS	D	-	D				A	A		A	A		
		Delay	41	-	36				5	5		1	0		
		Queue	135'	-	65'				25'	100'		80'	'		
	SAT	LOS	D	-	C				A	A		A	A		
		Delay	41	-	34				5	5		1	0		
Queue		160'	-	65'				25'	95'		90'	'			

(-) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.
 Delay is reported in seconds. Queue is the maximum of the 50th & 95th percentile queue, measured in feet.
 U-Turns, if any, are included in the left-turn volume.

CHAPTER V – RECOMMENDATIONS AND CONCLUSION

PART A – RECOMMENDATIONS

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual* (HCM), 6th edition using Synchro 11. For the purpose of this study, LOS D was used to define acceptable peak hour operating conditions. *Note that improvements discussed below are recommended for consideration and are not legally binding. All agencies reserve the right to determine alternative solutions.*

The following modifications are recommended to accommodate traffic based on the assumptions outlined in the TIA.

General

- Provide Chick-Fil-A site driveways to West Morgan Avenue and the Office Depot internal frontage road as shown on the development site plan. The West Morgan Avenue driveway should be designed and signed for right-out operation only with stop sign control at the driveway exit and “Exit Only” (R7-201E) sign restricting entering vehicles. Additional signage should be provided for exiting traffic with a Right-turn Only (R3-5R) sign provided within the site at the driveway.

West Morgan Avenue at West Lakefield Drive

- Using pavement marking and signage, change the lane configuration on the north approach to provide a dedicated left-turn lane, a dedicated through lane and a dedicated right-turn lane (changing the center lane from a shared lane to a dedicated through lane).
- Remove the split phasing for the northbound/southbound movements at the intersection to conventional phasing.
- Program the controller to change the eastbound/westbound left-turn phasing to a lagging condition.
- Provide post-mounted flashing yellow arrows on all approaches to accommodate either lead or lag left-turn phasing.

West Morgan Avenue at South 27th Street

- Provide left-turn arrow/phasing for eastbound left-turn movements.
- Program the controller to add the left-turn phasing condition.

PART B – CONCLUSION

All movements at the study area intersections are expected to operate efficiently with the assumptions outlined in this TIA and with the identified recommended modifications. With the recommended modifications implemented at the West Morgan Avenue intersection with West Lakefield Drive and the West Morgan Avenue intersection with South 27th Street, the revised geometry and phasing is expected to improve the overall operations and safety at the intersections.

Appendix A

Traffic

Existing Turning Movement Counts

Saturation Flow Rate Calculations

Existing Traffic Signal Timings

Counts at Proposed Site

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Base Information, Observed (4) Hour and Estimated (24) Hour Volume Summaries

Major St: Morgan Avenue
 Minor St: Lakefield Drive
 Intersection of: Morgan Avenue & Lakefield Drive

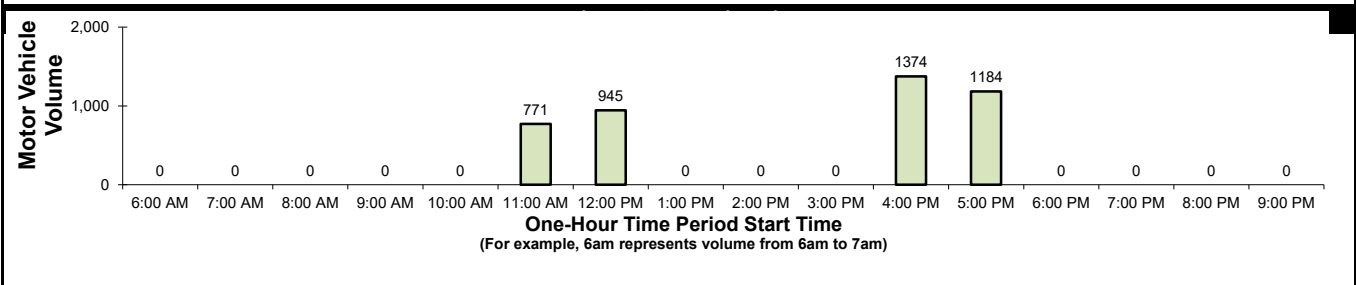
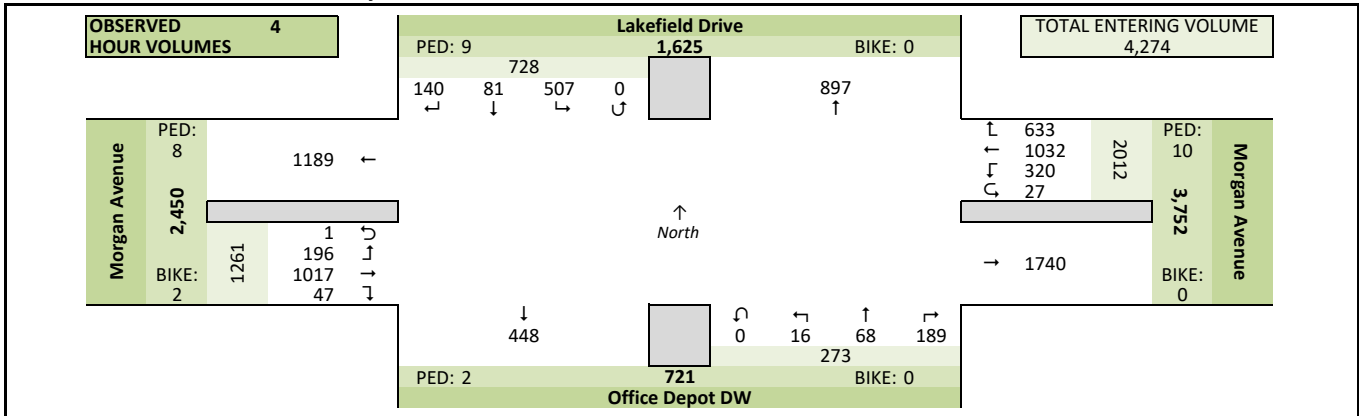
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	Lakefield Drive		
East Leg	Morgan Avenue		
South Leg	Office Depot DW		
West Leg	Morgan Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

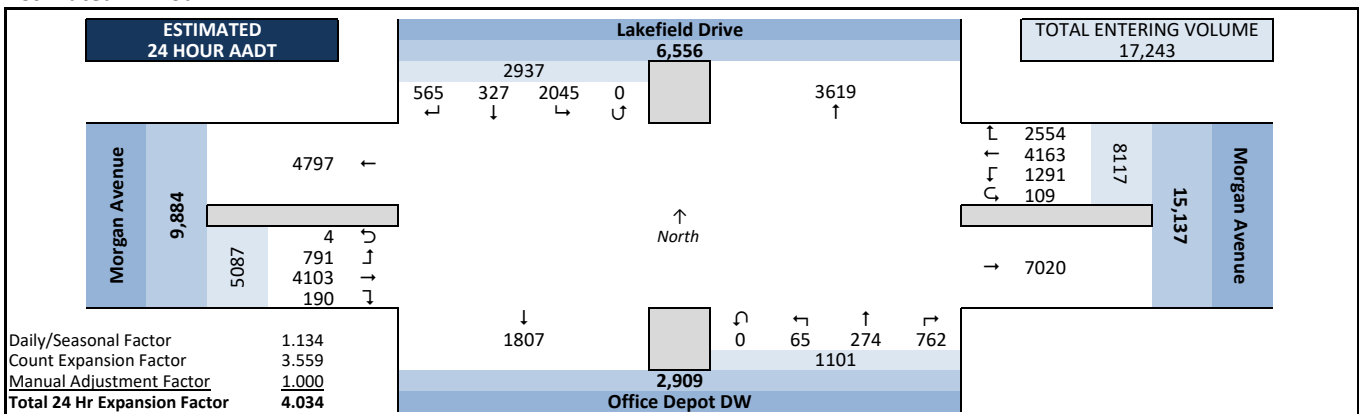
Count Information

Hrs Counted:	11:00 AM-01:00 PM and 04:00 PM-06:00 PM		
1st Day of Count	Tuesday, January 24, 2023		Weather
AM Peak Period	Tuesday, January 24, 2023		Clear & Dry
Midday Peak Period	Tuesday, January 24, 2023		Clear & Dry
PM Peak Period	Monday, January 30, 2023		Clear & Dry
Calculated Peak Hours			
	AM	MD	12:00-1:00pm
		PM	4:15-5:15pm
Peak Hours Selected for Analysis			
	AM	MD	12:00-1:00pm
		PM	4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.134	Count Expansion Factor	3.559
Company Name	TADI, Inc		Manual Adj.
			1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Jane Fait	
	PM Peak Period	Amy Scheuerlein	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4 Hour Volume Summary



Estimated 24 Hour AADT



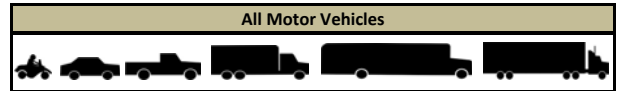
Daily/Seasonal Factor	1.134
Count Expansion Factor	3.559
Manual Adjustment Factor	1.000
Total 24 Hr Expansion Factor	4.034

Intersection Traffic Volume Report

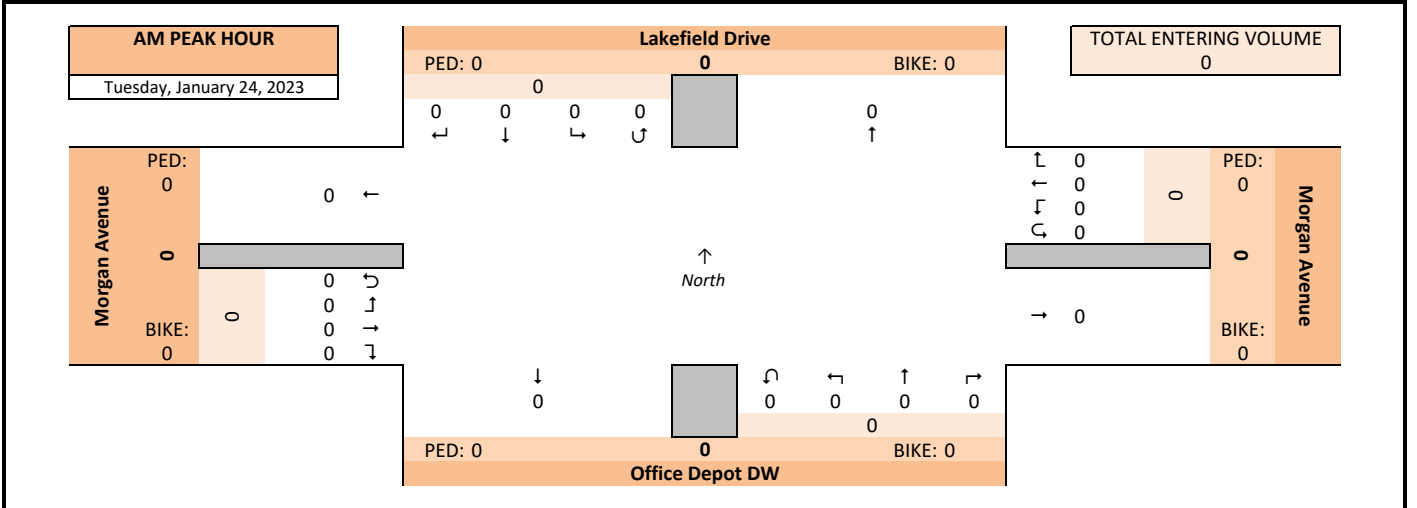
Count Basics	Page 2 of 13		
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

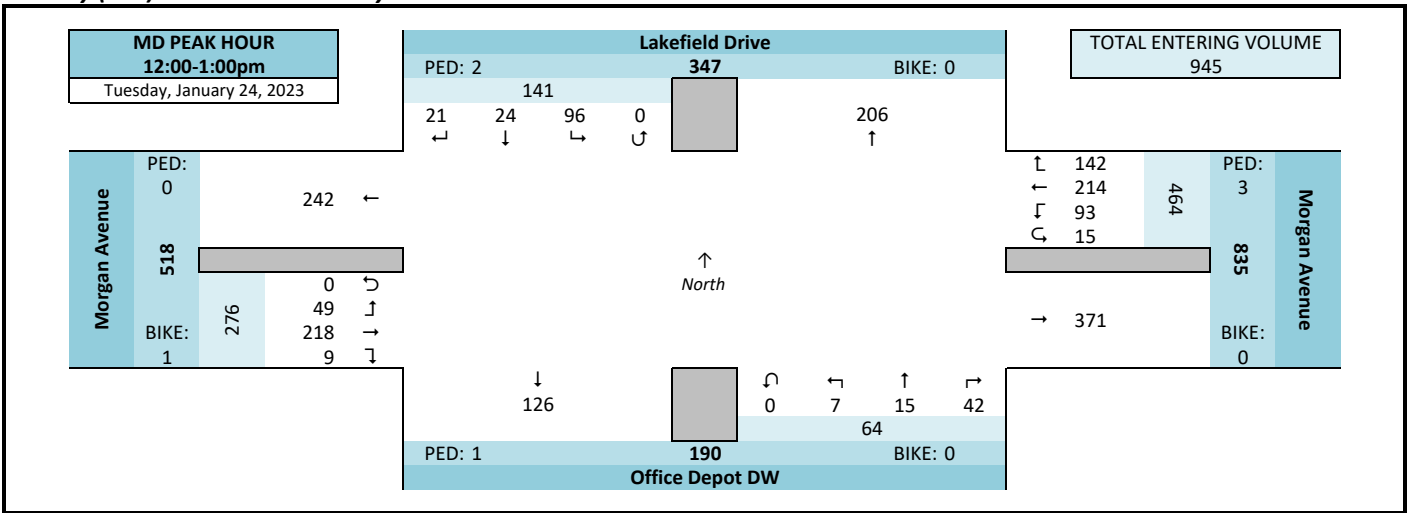
Morgan Avenue & Lakefield Drive



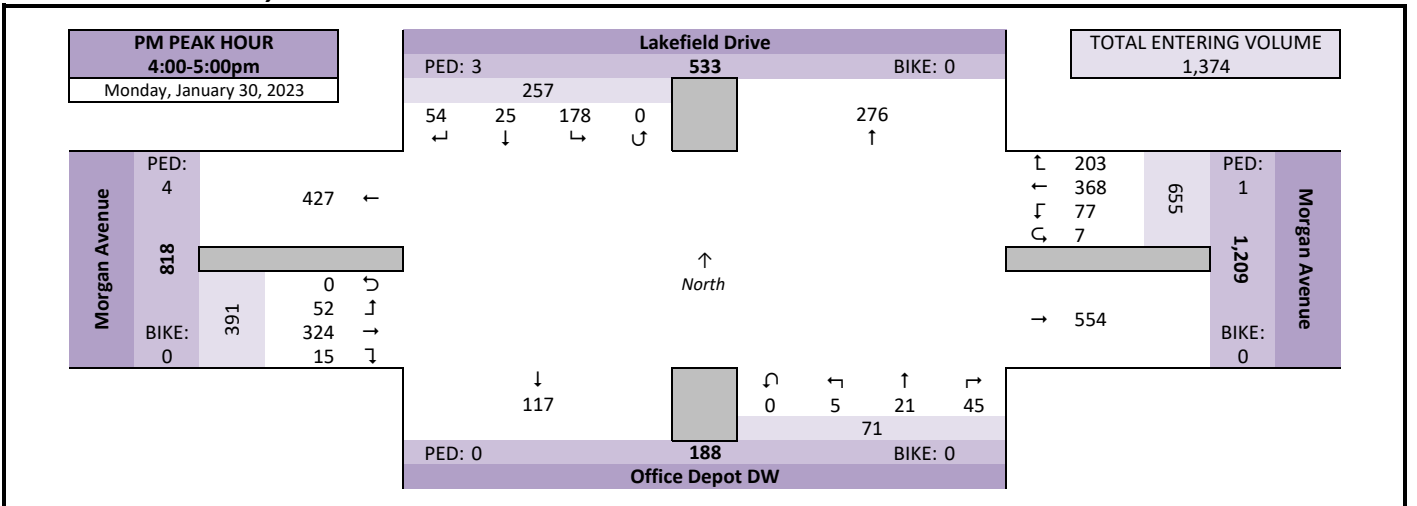
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

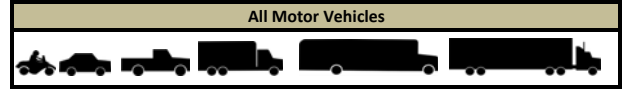


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Peak Hour Volume Summary

Morgan Avenue & Lakefield Drive



Peak Hour Volumes, Truck Percentages, and PHFs

Tuesday, January 24, 2023		From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					Totals	
AM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Hour	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Tuesday, January 24, 2023		From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					Totals
MD Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
Midday (MD) Peak Hour	12:00 PM	4	5	22	0	31	32	44	30	2	108	6	5	3	0	14	5	44	9	0	58	211
	12:15 PM	7	7	26	0	40	35	47	20	7	109	14	6	2	0	22	2	55	11	0	68	239
	12:30 PM	5	8	24	0	37	42	67	22	3	134	10	1	0	0	11	1	66	15	0	82	264
	12:45 PM	5	4	24	0	33	33	56	21	3	113	12	3	2	0	17	1	53	14	0	68	231
	Peak Hour Volume	21	24	96	0	141	142	214	93	15	464	42	15	7	0	64	9	218	49	0	276	945
	Rounded Hourly Volume	20	25	95	0	140	140	215	95	15	465	40	15	5	0	60	10	220	50	0	280	945
	% Single Unit Trucks	0.0	0.0	6.2	0.0	4.3	7.7	3.3	0.0	0.0	3.9	0.0	6.7	0.0	0.0	1.6	11.1	3.2	2.0	0.0	3.3	3.6
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.4	0.1
	% Trucks (Total)	0.0	0.0	6.2	0.0	4.3	7.7	3.3	0.0	0.0	3.9	0.0	6.7	0.0	0.0	1.6	11.1	3.7	2.0	0.0	3.6	3.7
Peak Hour Factor (PHF)	0.75	0.75	0.92	0.00	0.88	0.85	0.80	0.77	0.54	0.87	0.75	0.62	0.58	0.00	0.73	0.45	0.83	0.82	0.00	0.84	0.89	

Monday, January 30, 2023		From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					Totals
PM Peak Hour	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
PM Peak Hour	4:00 PM	12	4	53	0	69	59	79	16	1	155	8	5	0	0	13	2	69	13	0	84	321
	4:15 PM	15	5	46	0	66	52	95	22	3	172	12	8	0	0	20	4	94	13	0	111	369
	4:30 PM	15	8	36	0	59	48	96	17	0	161	11	6	2	0	19	5	88	15	0	108	347
	4:45 PM	12	8	43	0	63	44	98	22	3	167	14	2	3	0	19	4	73	11	0	88	337
	Peak Hour Volume	54	25	178	0	257	203	368	77	7	655	45	21	5	0	71	15	324	52	0	391	1374
	Rounded Hourly Volume	55	25	180	0	260	205	370	75	5	655	45	20	5	0	70	15	325	50	0	390	1375
	% Single Unit Trucks	0.0	0.0	1.7	0.0	1.2	1.5	2.4	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	3.3	2.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	1.7	0.0	1.2	1.5	2.4	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	3.3	2.0
Peak Hour Factor (PHF)	0.90	0.78	0.84	0.00	0.93	0.86	0.94	0.87	0.58	0.95	0.80	0.66	0.42	0.00	0.89	0.75	0.86	0.87	0.00	0.88	0.93	

Peak Hour Pedestrian and Bicyclist Volumes

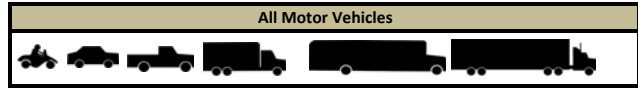
Pedestrians and Bicyclists		Crossing North Approach Lakefield Drive			Crossing East Approach Morgan Avenue			Crossing South Approach Office Depot DW			Crossing West Approach Morgan Avenue			Total Ped & Bike Volume
15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	1	0	1	0	0	0	1	0	1	0	0	0	2
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	2	0	2	0	0	0	0	0	0	2
	12:45 PM	1	0	1	1	0	1	0	0	0	0	1	1	3
	Total	2	0	2	3	0	3	1	0	1	0	1	1	7
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	3	0	3	0	0	0	0	0	0	4	0	4	7
	4:45 PM	0	0	0	1	0	1	0	0	0	0	0	0	1
	Total	3	0	3	1	0	1	0	0	0	4	0	4	8

Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

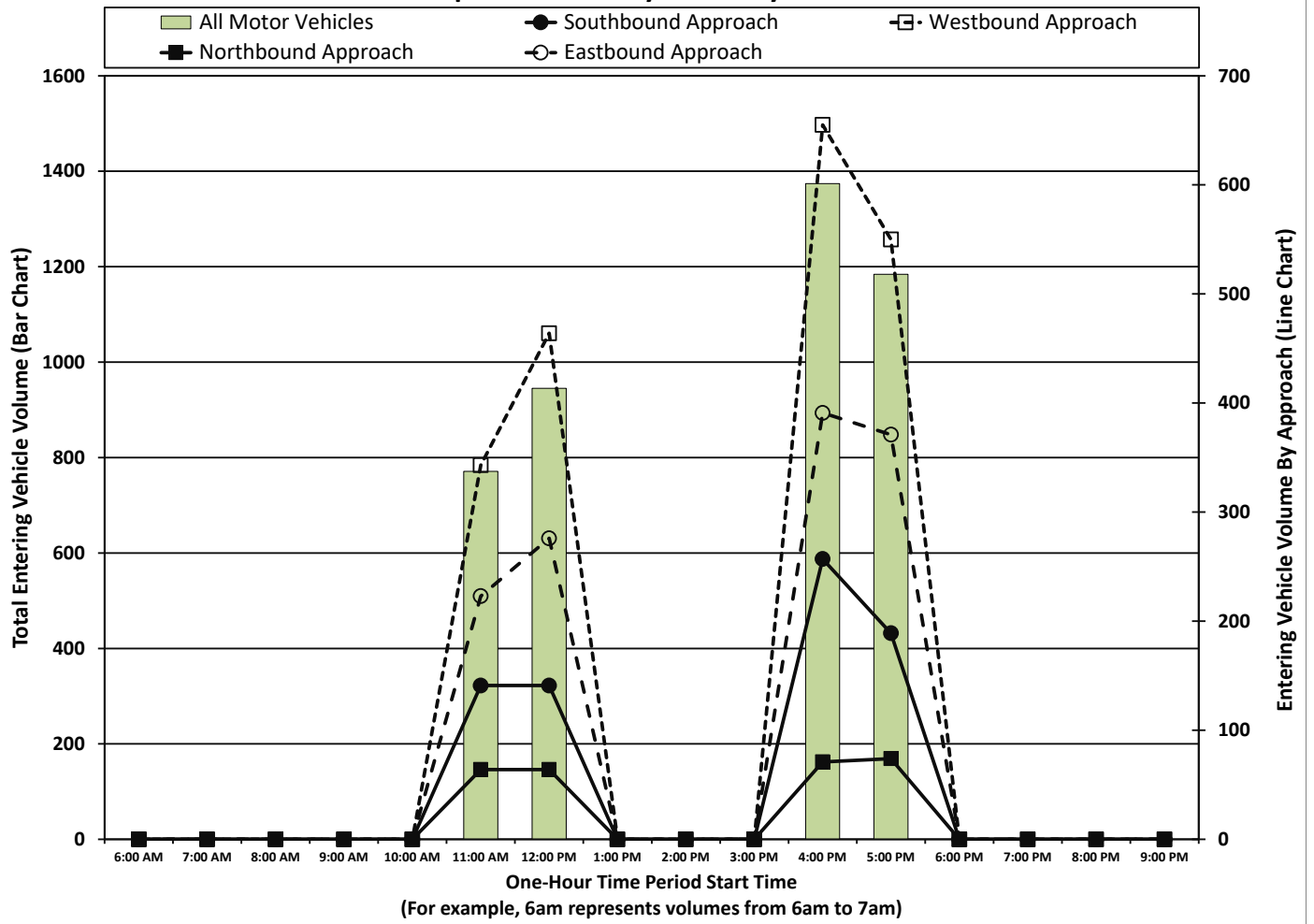
Morgan Avenue & Lakefield Drive



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					Total Vehicle Volume	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
	AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	30	11	100	0	141	102	172	69	0	343	46	16	2	0	64	11	172	39	1	223	771	566	205
	12:00 PM	21	24	96	0	141	142	214	93	15	464	42	15	7	0	64	9	218	49	0	276	945	740	205
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	54	25	178	0	257	203	368	77	7	655	45	21	5	0	71	15	324	52	0	391	1374	1046	328
	5:00 PM	35	21	133	0	189	186	278	81	5	550	56	16	2	0	74	12	303	56	0	371	1184	921	263
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals		140	81	507	0	728	633	1032	320	27	2012	189	68	16	0	273	47	1017	196	1	1261	4274	3273	1001

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics		Page 6 of 13	
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

15-Minute Automobile Data

Morgan Avenue & Lakefield Drive



15-Minute Automobile Data

15-Minute Time Period Start Time	From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					15-Min Totals	Hourly Sum																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11:00 AM	9	2	23	0	34	26	48	16	0	90	12	3	1	0	16	0	53	6	1	60	200	742	11:15 AM	8	2	28	0	38	15	33	14	0	62	18	2	0	0	20	5	38	8	0	51	171	743	11:30 AM	6	3	20	0	29	27	41	17	0	85	9	2	1	0	12	1	32	11	0	44	170	803	11:45 AM	7	4	21	0	32	30	46	21	0	97	7	8	0	0	15	5	38	14	0	57	201	889	12:00 PM	4	5	20	0	29	30	42	30	2	104	6	4	3	0	13	4	42	9	0	55	201	910	12:15 PM	7	7	24	0	38	30	47	20	7	104	14	6	2	0	22	2	54	11	0	67	231	12:30 PM	5	8	22	0	35	40	66	22	3	131	10	1	0	0	11	1	64	14	0	79	256	12:45 PM	5	4	24	0	33	31	52	21	3	107	12	3	2	0	17	1	50	14	0	65	222	PM Peak Period	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Totals		139	81	488	0	708	614	1010	318	27	1969	188	66	16	0	270	46	976	195	1
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11:00 AM	9	2	23	0	34	26	48	16	0	90	12	3	1	0	16	0	53	6	1	60	200	742	11:15 AM	8	2	28	0	38	15	33	14	0	62	18	2	0	0	20	5	38	8	0	51	171	743	11:30 AM	6	3	20	0	29	27	41	17	0	85	9	2	1	0	12	1	32	11	0	44	170	803	11:45 AM	7	4	21	0	32	30	46	21	0	97	7	8	0	0	15	5	38	14	0	57	201	889	12:00 PM	4	5	20	0	29	30	42	30	2	104	6	4	3	0	13	4	42	9	0	55	201	910	12:15 PM	7	7	24	0	38	30	47	20	7	104	14	6	2	0	22	2	54	11	0	67	231	12:30 PM	5	8	22	0	35	40	66	22	3	131	10	1	0	0	11	1	64	14	0	79	256	12:45 PM	5	4	24	0	33	31	52	21	3	107	12	3	2	0	17	1	50	14	0	65	222	PM Peak Period	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Totals		139	81	488	0	708	614	1010	318	27	1969	188	66	16	0	270	46	976	195	1	1218	4165																																																																																																																																																																																																																																																																																																																																																																																																																											
PM Peak Period	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Totals		139	81	488	0	708	614	1010	318	27	1969	188	66	16	0	270	46	976	195	1	1218	4165																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Totals		139	81	488	0	708	614	1010	318	27	1969	188	66	16	0	270	46	976	195	1	1218	4165																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Peak Hour Automobile Volume Summary

Hourly Time Period Start Time	From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					Total Hourly Volume																																															
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total																																																
AM 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	MD 12:00 PM	21	24	90	0	135	131	207	93	15	446	42	14	7	0	63	8	210	48	0	266	910	PM 4:00 PM	54	25	175	0	254	200	359	77	7	643	45	21	5	0	71	15	311	52	0	378	1346
MD 12:00 PM	21	24	90	0	135	131	207	93	15	446	42	14	7	0	63	8	210	48	0	266	910	PM 4:00 PM	54	25	175	0	254	200	359	77	7	643	45	21	5	0	71	15	311	52	0	378	1346																									
PM 4:00 PM	54	25	175	0	254	200	359	77	7	643	45	21	5	0	71	15	311	52	0	378	1346																																															

Intersection Traffic Volume Report

Count Basics			Page 8 of 13		
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session		
Total Number of Hours Counted:	4	Non-Holiday	No Special Events		

15-Minute Semi-Truck Data

Morgan Avenue & Lakefield Drive



15-Minute Semi-Truck Data

15-Minute Time Period	From North					From East					From South					From West					15-Min Totals	Hourly Sum	
	Lakefield Drive					Morgan Avenue					Office Depot DW					Morgan Avenue							
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	[Data rows for AM Peak Period]																						
Midday Peak Period	[Data rows for Midday Peak Period]																						
PM Peak Period	[Data rows for PM Peak Period]																						
Totals	0	0	1	0	1	0	0	1	0	1	1	1	0	0	0	1	0	2	0	0	2	5	

Peak Hour Semi-Truck Volume Summary

Hourly Time Period	From North					From East					From South					From West					Total Hourly Volume
	Lakefield Drive					Morgan Avenue					Office Depot DW					Morgan Avenue					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics			Page 11 of 13		
Start Date:	Tuesday, January 24, 2023	Weekday	Schools in Session		
Total Number of Hours Counted:	4	Non-Holiday	No Special Events		

15-Minute Pedestrian and Bicyclist Data

Morgan Avenue & Lakefield Drive



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Lakefield Drive			Morgan Avenue			Office Depot DW			Morgan Avenue				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	1	0	1	0	0	0	1	0	1	2	11
11:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	1	11
11:30 AM	1	0	1	0	0	0	0	0	0	1	0	1	2	10
11:45 AM	0	0	0	5	0	5	1	0	1	0	0	0	6	10
12:00 PM	1	0	1	0	0	0	1	0	1	0	0	0	2	7
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	2	0	2	0	0	0	0	0	0	2	
12:45 PM	1	0	1	1	0	1	0	0	0	0	1	1	3	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
4:30 PM	3	0	3	0	0	0	0	0	0	4	0	4	7	8
4:45 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	3	0	3	0	0	0	0	0	0	2	0	2	5	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	9	0	9	10	0	10	2	0	2	8	2	10	31	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Base Information, Observed (2) Hour and Estimated (24) Hour Volume Summaries

Major St: Morgan Avenue
 Minor St: Lakefield Drive
 Intersection of: Morgan Avenue & Lakefield Drive

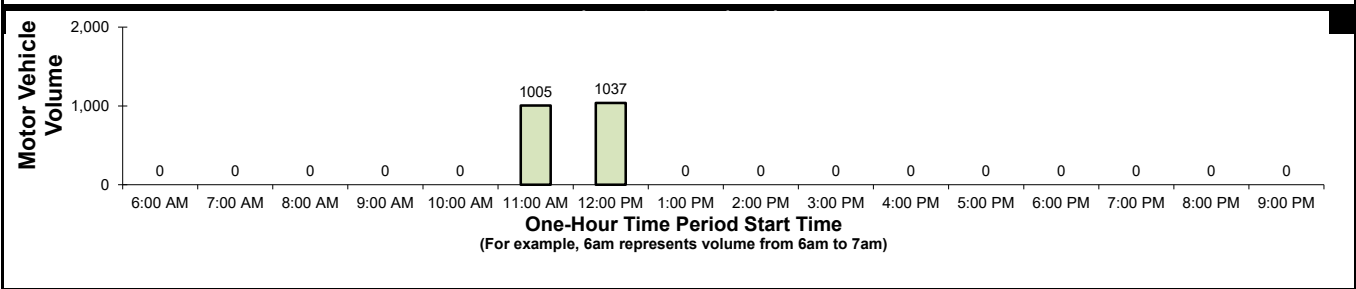
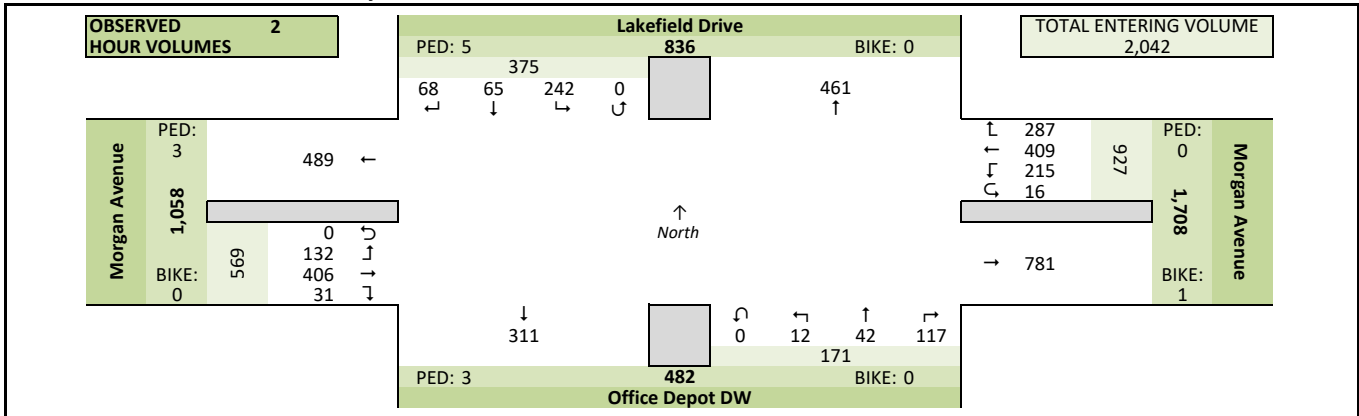
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	Lakefield Drive		
East Leg	Morgan Avenue		
South Leg	Office Depot DW		
West Leg	Morgan Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

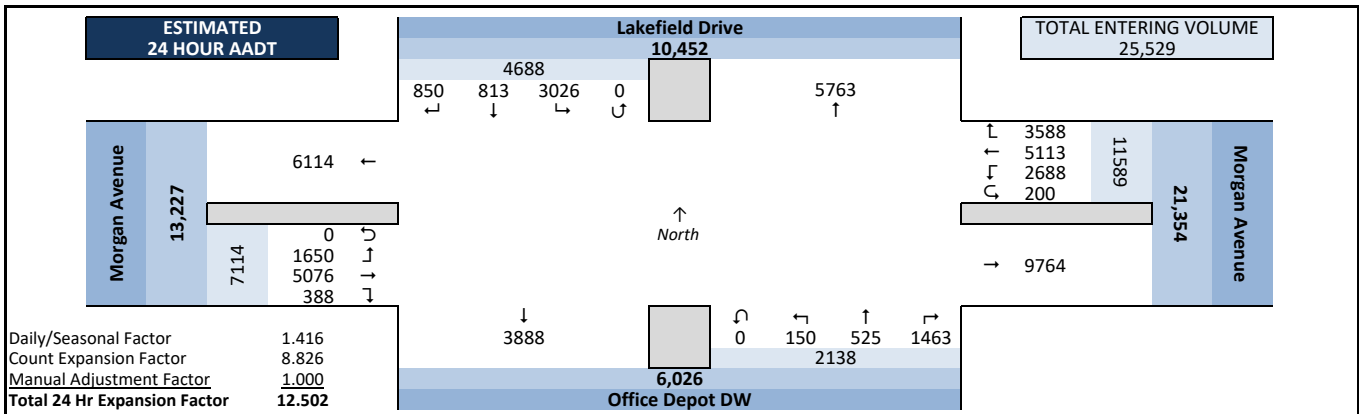
Count Information

Hrs Counted:	11:00 AM-01:00 PM		
1st Day of Count	Saturday, January 28, 2023	Weather	
AM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Midday Peak Period	Saturday, January 28, 2023	Clear & Dry	
PM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Calculated Peak Hours			
	AM	MD	12:00-1:00pm
Peak Hours Selected for Analysis			
	AM	MD	11:45-12:45pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.416	Count Expansion Factor	8.826
Company Name	TADI, Inc	Manual Adj.	1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Wendy Picard	
	PM Peak Period	None	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 2 Hour Volume Summary



Estimated 24 Hour AADT



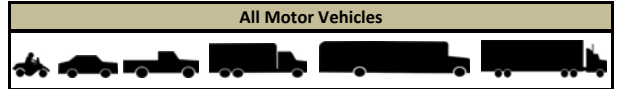
Daily/Seasonal Factor	1.416
Count Expansion Factor	8.826
Manual Adjustment Factor	1.000
Total 24 Hr Expansion Factor	12.502

Intersection Traffic Volume Report

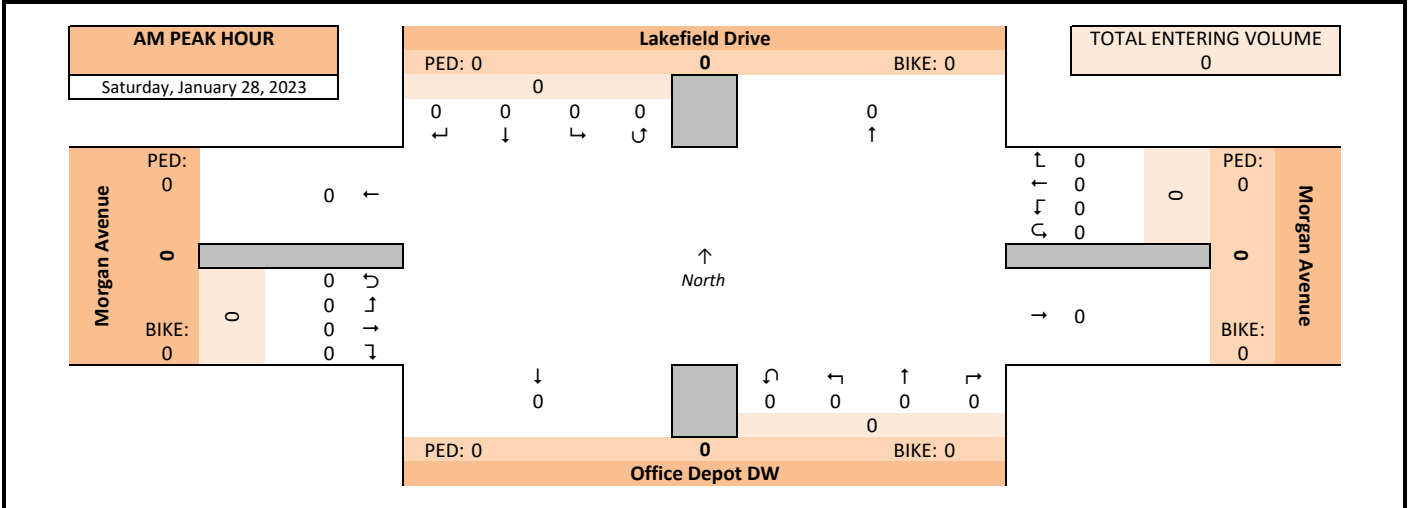
Count Basics		Page 2 of 13	
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted: 2		Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

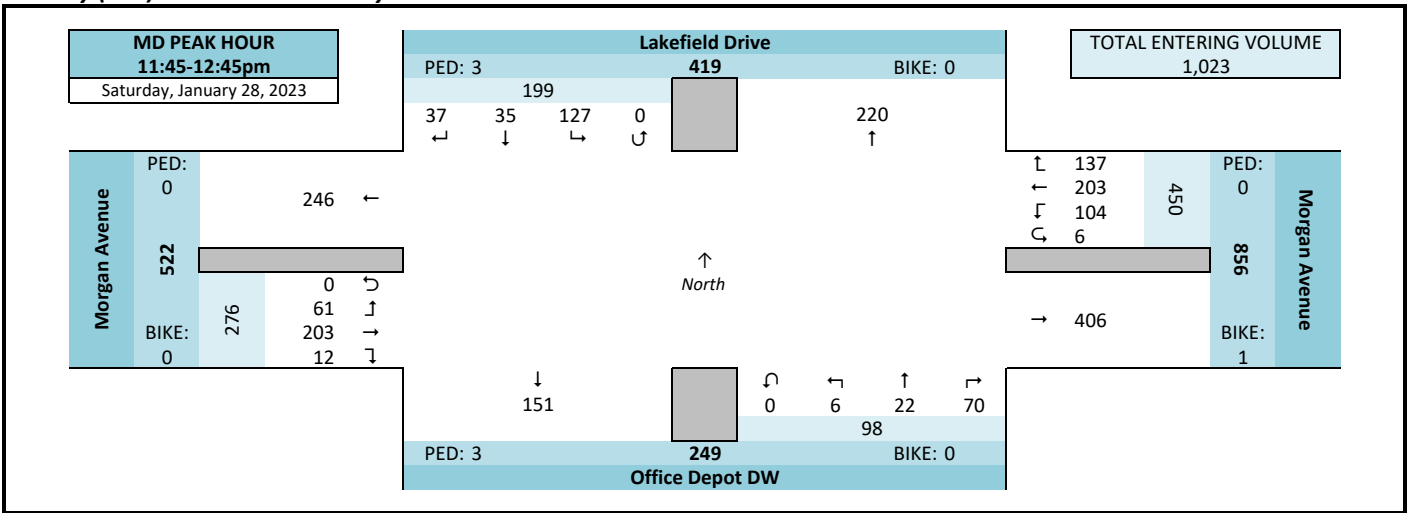
Morgan Avenue & Lakefield Drive



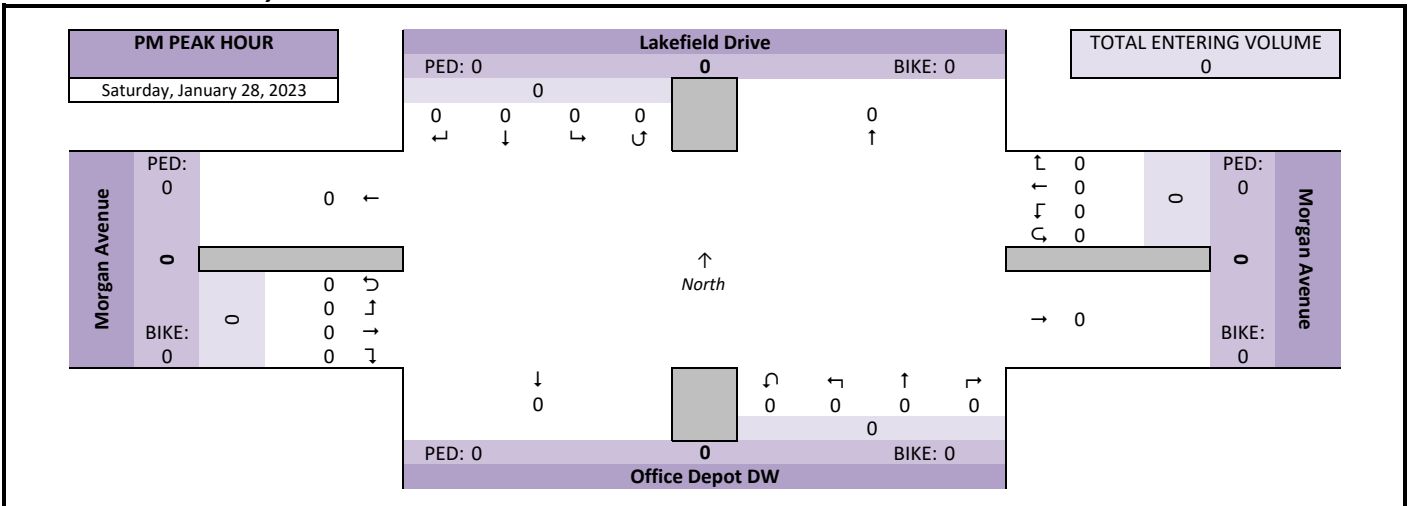
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

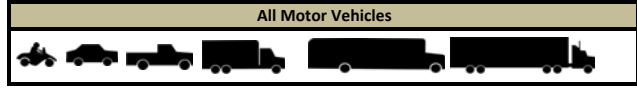


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

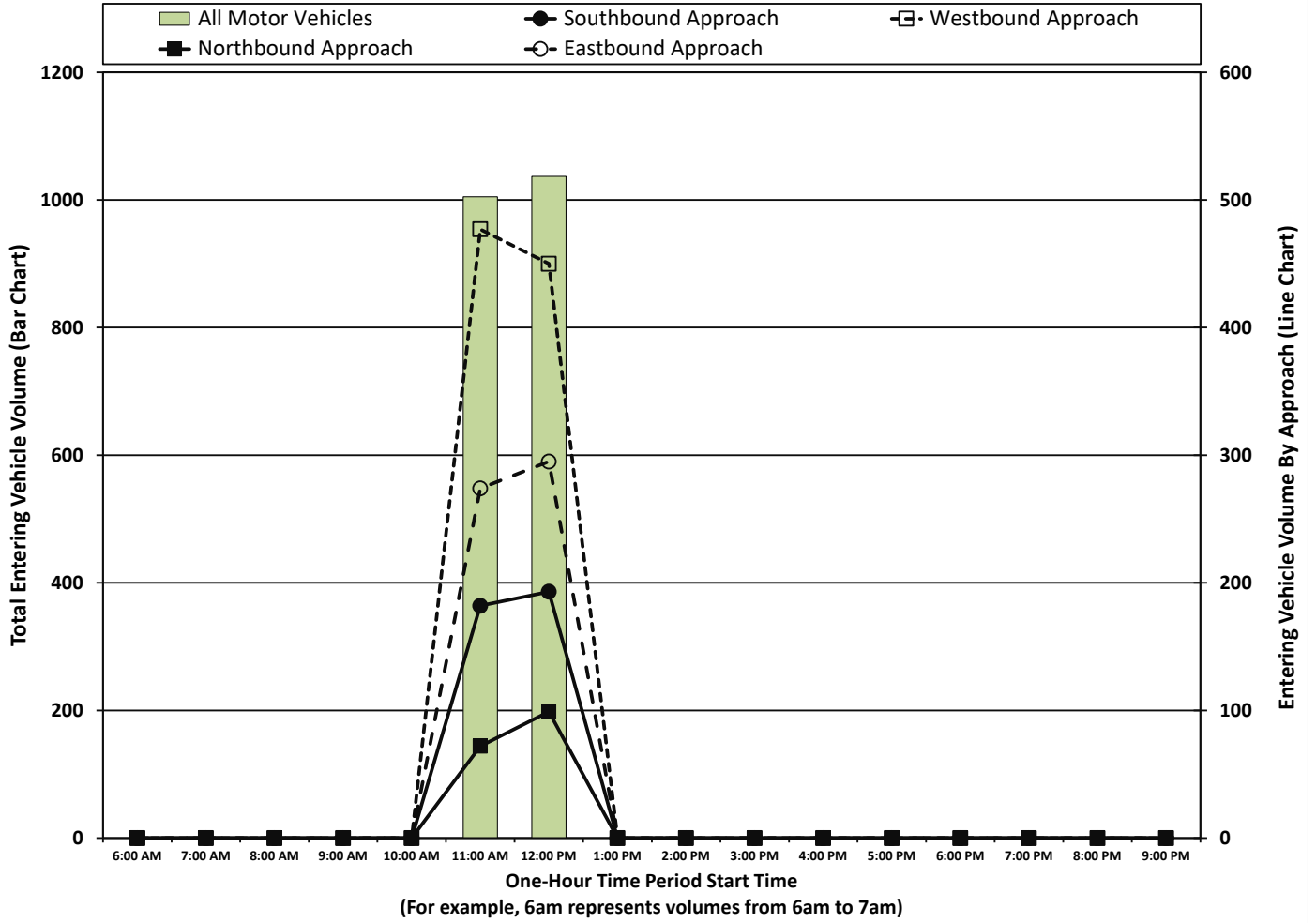
Morgan Avenue & Lakefield Drive



One-Hour Motor Vehicle Data

One-Hour Time Period	From North Lakefield Drive					From East Morgan Avenue					From South Office Depot DW					From West Morgan Avenue					Total Vehicle Volume	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
	Start Time																							
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	41	33	108	0	182	143	216	107	11	477	52	17	3	0	72	16	193	65	0	274	1005	751	254
	12:00 PM	27	32	134	0	193	144	193	108	5	450	65	25	9	0	99	15	213	67	0	295	1037	745	292
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Totals	68	65	242	0	375	287	409	215	16	927	117	42	12	0	171	31	406	132	0	569	2042	1496	546

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics			Page 11 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Morgan Avenue & Lakefield Drive



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Lakefield Drive			Morgan Avenue			Office Depot DW			Morgan Avenue				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1	6
11:15 AM	1	0	1	0	0	0	0	0	0	1	0	1	2	7
11:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	6
11:45 AM	1	0	1	0	0	0	1	0	1	0	0	0	2	7
12:00 PM	2	0	2	0	0	0	0	0	0	0	0	0	2	6
12:15 PM	0	0	0	0	1	1	0	0	0	0	0	0	1	
12:30 PM	0	0	0	0	0	0	2	0	2	0	0	0	2	
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	5	0	5	0	1	1	3	0	3	3	0	3	12	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Friday, January 27, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Base Information, Observed (4) Hour and Estimated (24) Hour Volume Summaries

Major St: Morgan Avenue
 Minor St: Development Driveway
 Intersection of: Morgan Avenue & Development Driveway

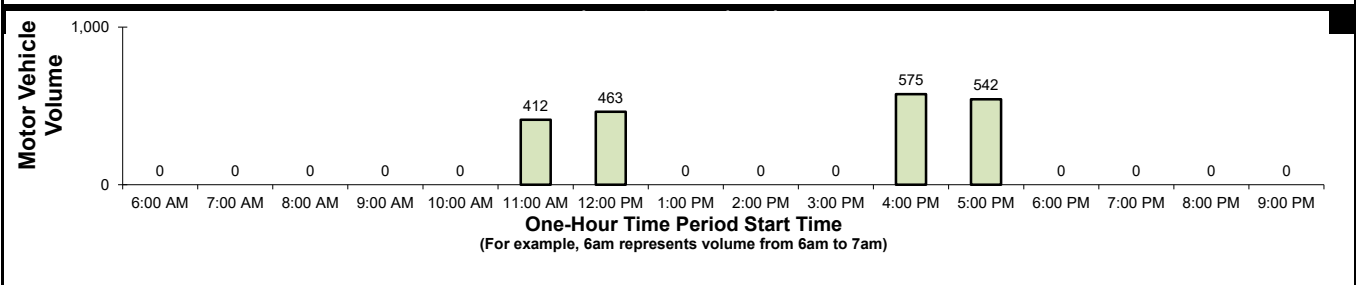
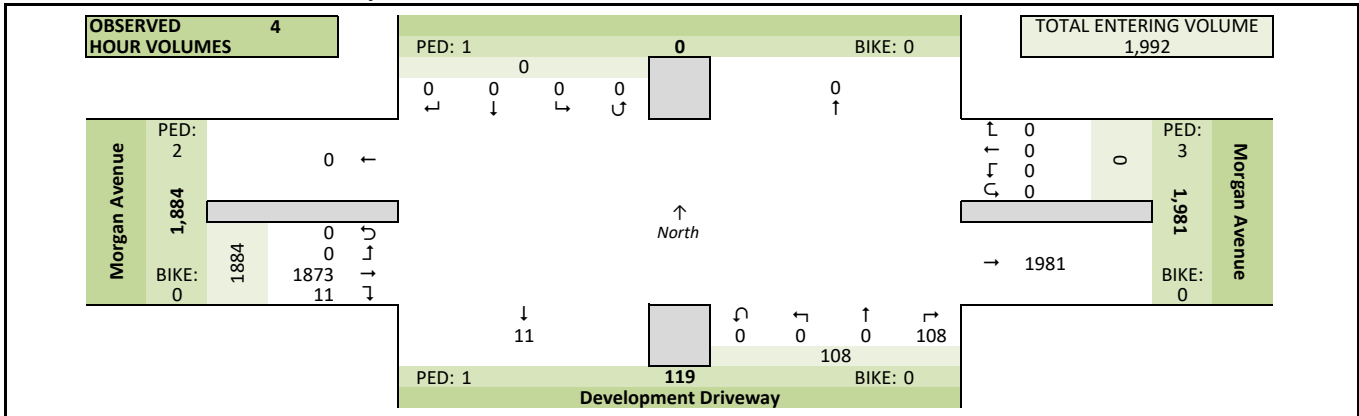
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Uncontrolled		
Roadway Names	North Direction ↑		
North Leg			
East Leg	Morgan Avenue		
South Leg	Development Driveway		
West Leg	Morgan Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

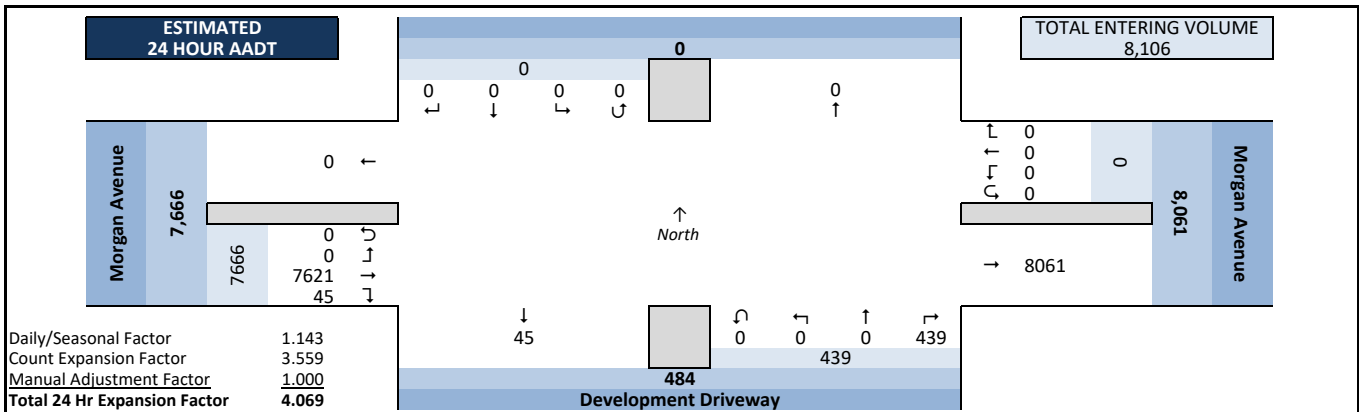
Count Information

Hrs Counted:	11:00 AM-01:00 PM and 04:00 PM-06:00 PM		
1st Day of Count	Friday, January 27, 2023		Weather
AM Peak Period	Friday, January 27, 2023		Clear & Dry
Midday Peak Period	Friday, January 27, 2023		Clear & Dry
PM Peak Period	Monday, January 30, 2023		Clear & Dry
Calculated Peak Hours			
	AM	MD 11:45-12:45pm	PM 4:15-5:15pm
Peak Hours Selected for Analysis			
	AM	MD 12:00-1:00pm	PM 4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.143	Count Expansion Factor	3.559
Company Name	TADI, Inc		Manual Adj. 1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Amy Scheuerlein	
	PM Peak Period	Jane Fait	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4 Hour Volume Summary



Estimated 24 Hour AADT

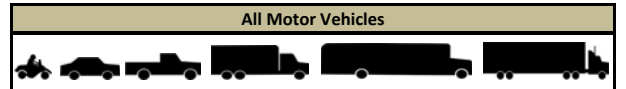


Intersection Traffic Volume Report

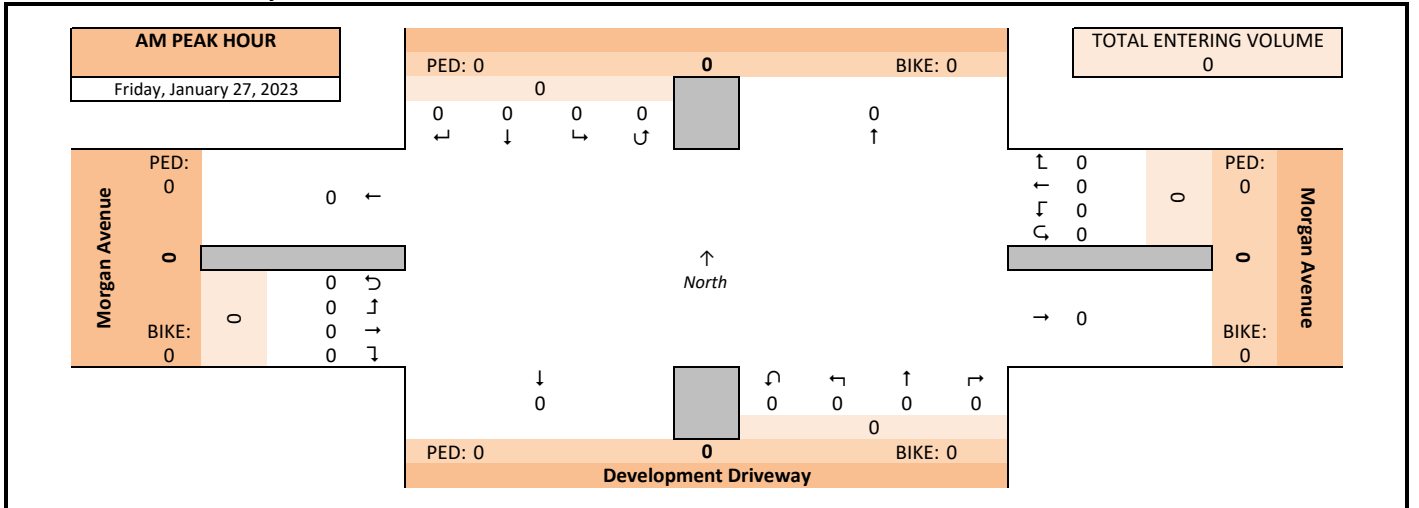
Count Basics		Page 2 of 13	
Start Date:	Friday, January 27, 2023	Weekday	Schools in Session
Total Number of Hours Counted: 4		Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

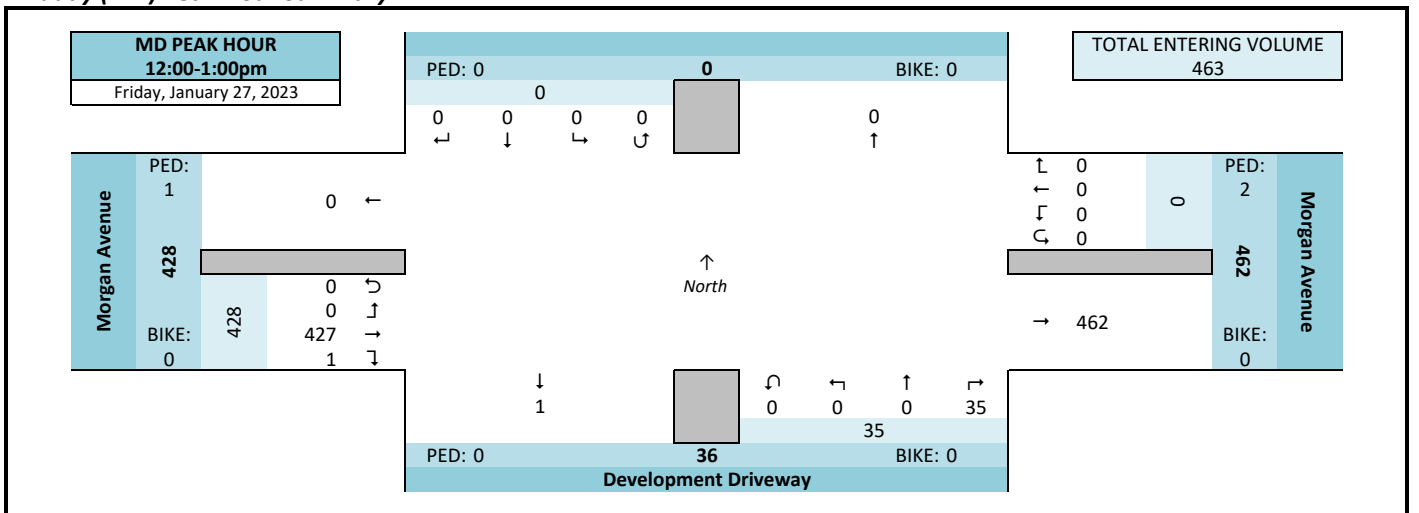
Morgan Avenue & Development Driveway



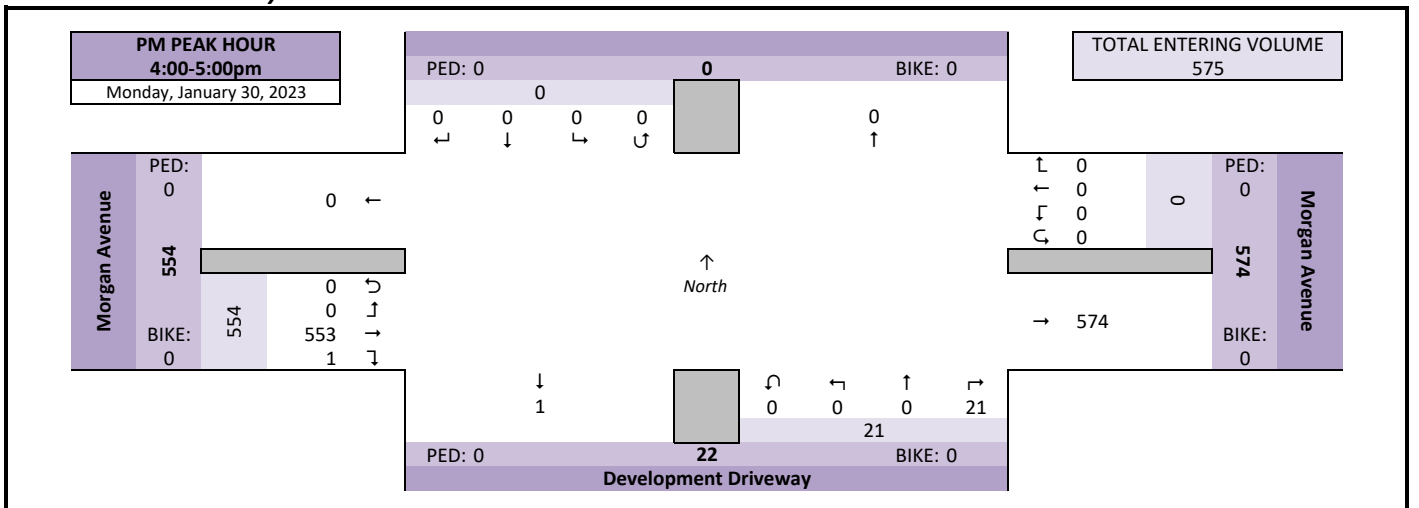
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

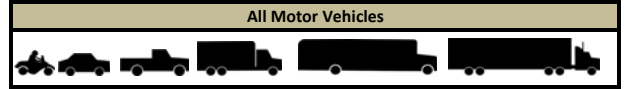


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Friday, January 27, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Peak Hour Volume Summary

Morgan Avenue & Development Driveway



Peak Hour Volumes, Truck Percentages, and PHFs

Friday, January 27, 2023		From North					From East					From South					From West					Totals
AM Peak Hour		Morgan Avenue					Development Driveway					Morgan Avenue										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Friday, January 27, 2023		From North					From East					From South					From West					Totals
MD Peak Hour		Morgan Avenue					Development Driveway					Morgan Avenue										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
12:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	111	0	0	111	115	
12:15 PM	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11	1	104	0	0	105	116	
12:30 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	113	0	0	113	121	
12:45 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	0	99	0	0	99	111	
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35	1	427	0	0	428	463	
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35	0	425	0	0	425	460	
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	4.0	3.7	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	4.0	3.7	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.73	0.25	0.94	0.00	0.00	0.95	0.96	

Monday, January 30, 2023		From North					From East					From South					From West					Totals
PM Peak Hour		Morgan Avenue					Development Driveway					Morgan Avenue										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	129	0	0	129	133	
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	154	0	0	154	159	
4:30 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	136	0	0	136	143	
4:45 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	1	134	0	0	135	140	
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	21	0	0	0	21	1	553	0	0	554	575	
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20	0	555	0	0	555	575	
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	2.9	2.8	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	2.9	2.8	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.75	0.25	0.90	0.00	0.00	0.90	0.90	

Peak Hour Pedestrian and Bicyclist Volumes

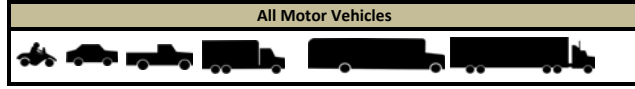
Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
15-Minute Start Time		Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	1	0	1	0	0	0	0	0	0	1
	12:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
	Total	0	0	0	2	0	2	0	0	0	1	0	1	3
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics		Page 4 of 13	
Start Date:	Friday, January 27, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

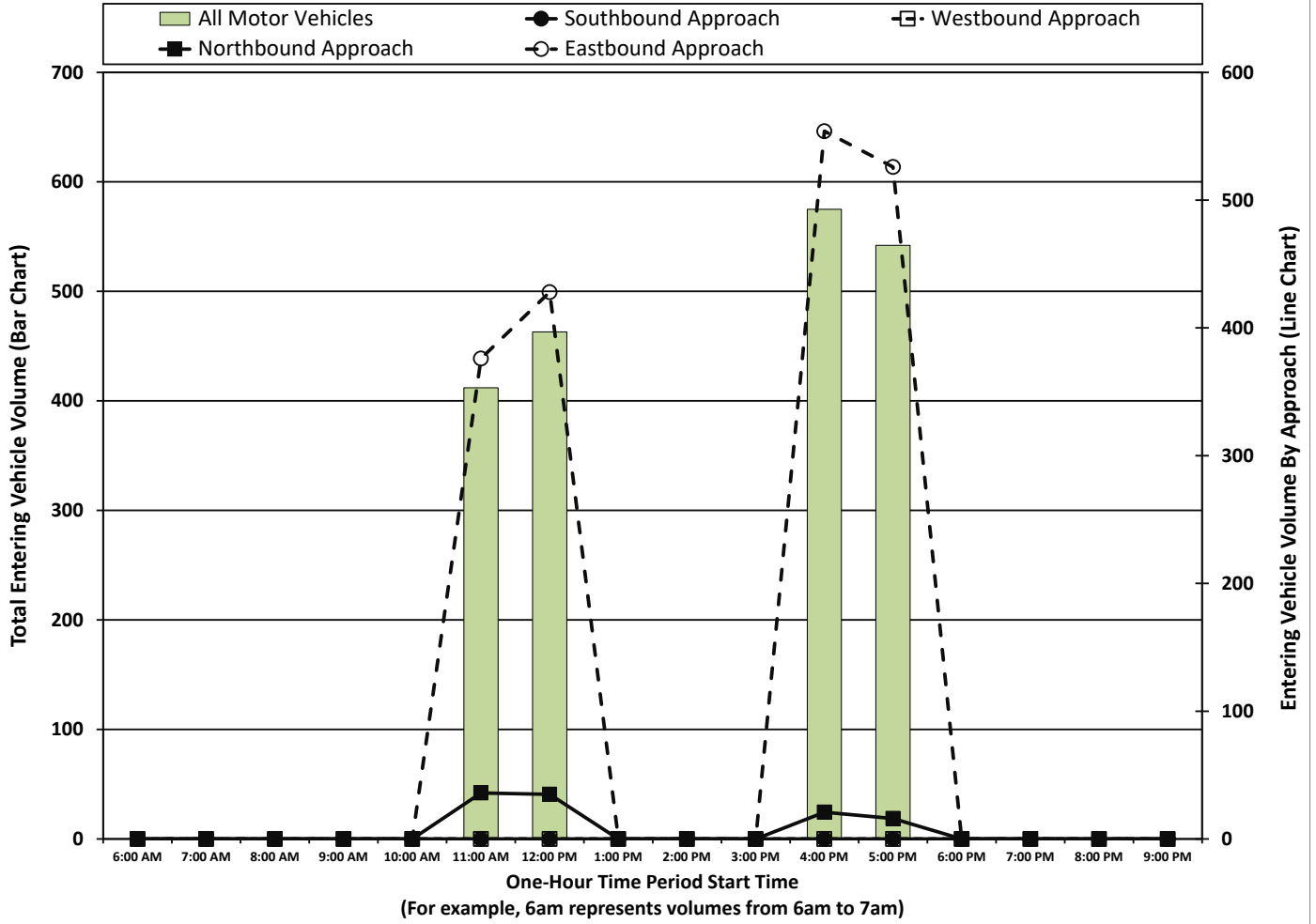
Morgan Avenue & Development Driveway



One-Hour Motor Vehicle Data

One-Hour Time Period	From North					From East					From South					From West					Total Vehicle	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
AM																								
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
MD																								
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11:00 AM	0	0	0	0	0	0	0	0	0	0	36	0	0	0	36	1	375	0	0	376	412	376		
12:00 PM	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35	1	427	0	0	428	463	428		
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM																								
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:00 PM	0	0	0	0	0	0	0	0	0	0	21	0	0	0	21	1	553	0	0	554	575	554		
5:00 PM	0	0	0	0	0	0	0	0	0	0	16	0	0	0	16	8	518	0	0	526	542	526		
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals	0	0	0	0	0	0	0	0	0	0	108	0	0	0	108	11	1873	0	0	1884	1992	1884		

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics	Page 9 of 13	
Start Date:	Friday, January 27, 2023	Weekday
Total Number of Hours Counted:	4	No Special Events

15-Minute Heavy Vehicle Data

Morgan Avenue & Development Driveway



15-Minute Heavy Vehicle Data

15-Minute Time Period	From North					From East					From South					From West					15-Min Totals	Hourly Sum
	Morgan Avenue					Development Driveway					Morgan Avenue											
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	17
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6	6	22
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	20
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8	8	8	20
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6	6	17
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4	4	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	2	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5	5	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4	4	16
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5	5	18
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4	4	16
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	3	15
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6	6	15
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	3	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	3	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3	3	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0	0	65	65	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period	From North					From East					From South					From West					Total Hourly Volume	
	Morgan Avenue					Development Driveway					Morgan Avenue											
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	17	17	17
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	16	16	16

Intersection Traffic Volume Report

Count Basics		Page 11 of 13	
Start Date:	Friday, January 27, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Morgan Avenue & Development Driveway



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
11:45 AM	1	0	1	1	0	1	1	0	1	1	0	1	4	6
12:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	3
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	1	0	1	0	0	0	0	0	0	1	
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	1	0	1	3	0	3	1	0	1	2	0	2	7	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Page 12 of 13	
Start Date:	Friday, January 27, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

15-Minute Adult & Children Count (Manual Entry)

Morgan Avenue & Development Driveway



15-Minute Adult & Children Pedestrian Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Morgan Avenue			Development Driveway			Morgan Avenue			Totals				
	Adults	Children	Total	Adults	Children	Total	Adults	Children	Total					
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	4	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	5	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	5	
11:45 AM	1	1	1	1	1	1	1	1	1	1	1	4	6	
12:00 PM	0	0	0	1	1	0	0	0	0	0	1	3	3	
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	
12:30 PM	0	0	0	1	1	0	0	0	0	0	1	1	2	
12:45 PM	0	0	0	0	0	0	0	1	1	1	1	1	1	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	1	0	1	3	0	3	1	0	1	2	0	2	7	

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted: 2		Non-Holiday	No Special Events

Base Information, Observed (2) Hour and Estimated (24) Hour Volume Summaries

Major St: Morgan Avenue
 Minor St: Development Driveway
 Intersection of: Morgan Avenue & Development Driveway

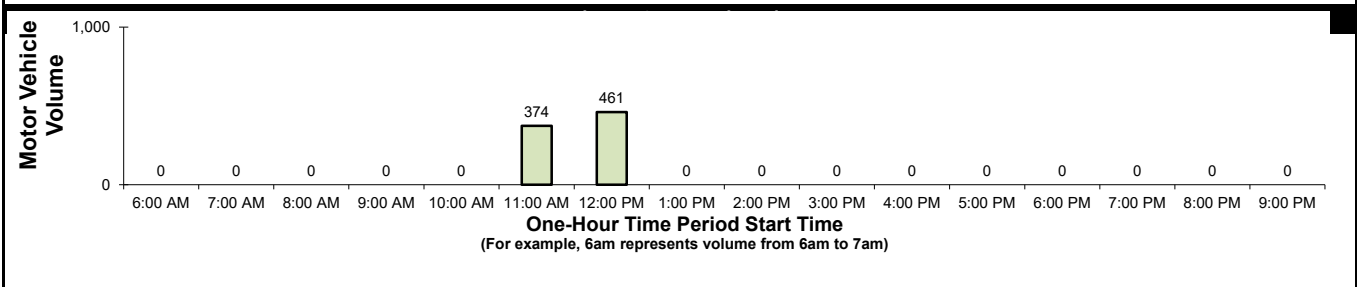
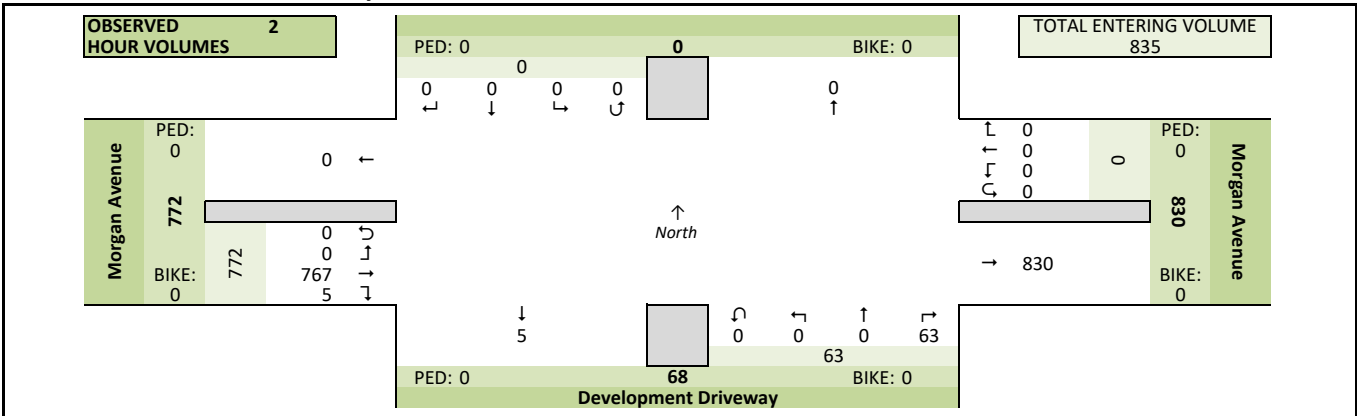
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Uncontrolled		
Roadway Names	North Direction	↑	
North Leg			
East Leg	Morgan Avenue		
South Leg	Development Driveway		
West Leg	Morgan Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

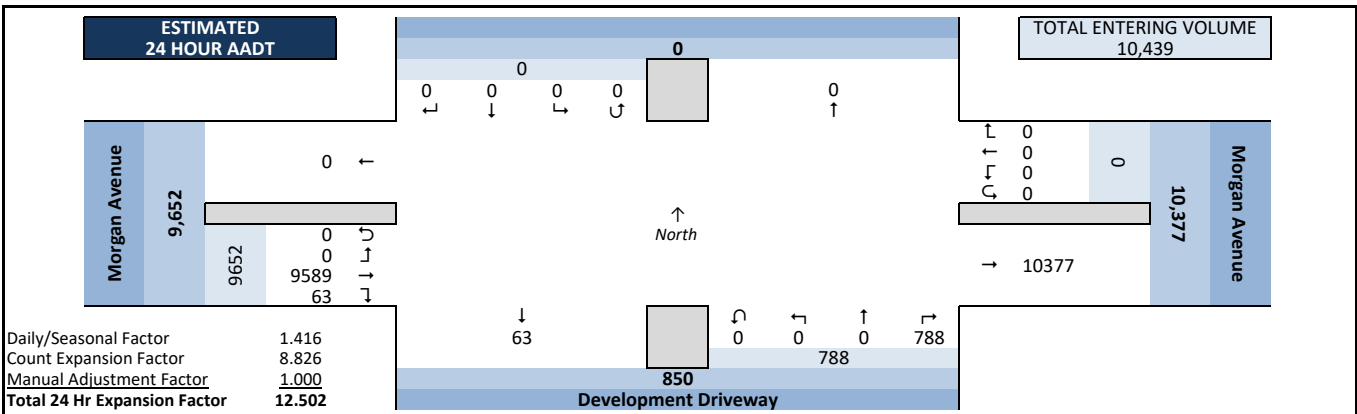
Count Information

Hrs Counted:	11:00 AM-01:00 PM		
1st Day of Count	Saturday, January 28, 2023		Weather
AM Peak Period	Saturday, January 28, 2023		Clear & Dry
Midday Peak Period	Saturday, January 28, 2023		Clear & Dry
PM Peak Period	Saturday, January 28, 2023		Clear & Dry
Calculated Peak Hours			
	AM	MD 12:00-1:00pm	PM
Peak Hours Selected for Analysis			
	AM	MD 11:45-12:45pm	PM
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.416	Count Expansion Factor	8.826
Company Name	TADI, Inc		Manual Adj: 1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Jane Fait	
	PM Peak Period	None	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 2 Hour Volume Summary



Estimated 24 Hour AADT

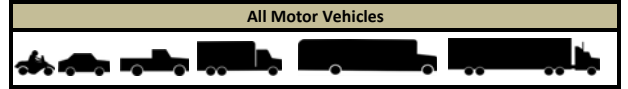


Intersection Traffic Volume Report

Count Basics			Page 3 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Peak Hour Volume Summary

Morgan Avenue & Development Driveway



Peak Hour Volumes, Truck Percentages, and PHFs

Saturday, January 28, 2023		From North					From East					From South					From West					Totals
AM Peak Hour		Morgan Avenue					Development Driveway					Morgan Avenue										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Saturday, January 28, 2023		From North					From East					From South					From West					Totals
MD Peak Hour		Morgan Avenue					Development Driveway					Morgan Avenue										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
11:45 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	0	93	0	0	93	105	
12:00 PM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	100	0	0	100	108	
12:15 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	1	103	0	0	104	110	
12:30 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	117	0	0	117	126	
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35	1	413	0	0	414	449	
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	35	0	0	0	35	0	415	0	0	415	450	
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	2.7	2.4	
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.2	
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	2.9	2.7	
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.00	0.73	0.25	0.88	0.00	0.00	0.88	0.89	

Saturday, January 28, 2023		From North					From East					From South					From West					Totals
PM Peak Hour		Morgan Avenue					Development Driveway					Morgan Avenue										
Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

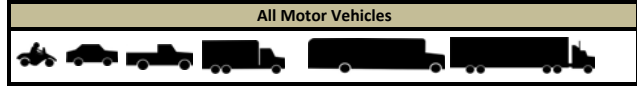
Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Morgan Avenue			Development Driveway			Morgan Avenue						
15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
MD	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	0	0	

Intersection Traffic Volume Report

Hourly Volume Summary - Motor Vehicle Data

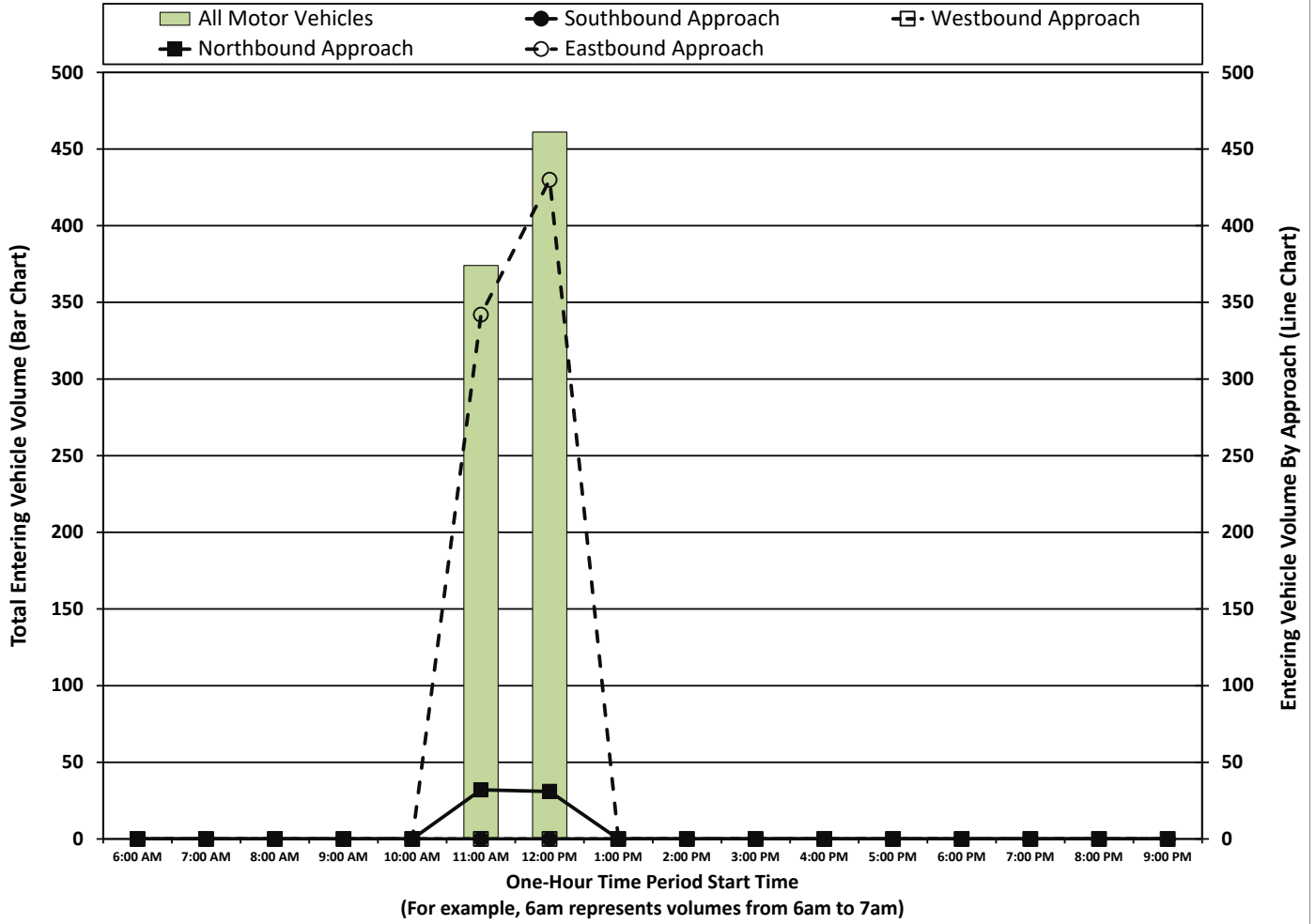
Morgan Avenue & Development Driveway



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	From North					From East					From South					From West					Total Vehicle	Directional Volume Totals						
						Morgan Avenue					Development Driveway					Morgan Avenue						Volume	E/W	N/S				
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total								
AM 6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
AM 7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
AM 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
AM 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
MD 10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
MD 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	32	3	339	0	0	342	374	342	32
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	0	0	0	31	2	428	0	0	430	461	430	31
MD 1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	0	0	0	0	0	63	0	0	0	63	5	767	0	0	772			835			772	63	

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics			Page 11 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

Morgan Avenue & Development Driveway



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	Morgan Avenue													
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Thursday, January 26, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Base Information, Observed (4) Hour and Estimated (24) Hour Volume Summaries

Major St: STH 241- 27th Street
 Minor St: Morgan Avenue
 Intersection of: STH 241- 27th Street & Morgan Avenue

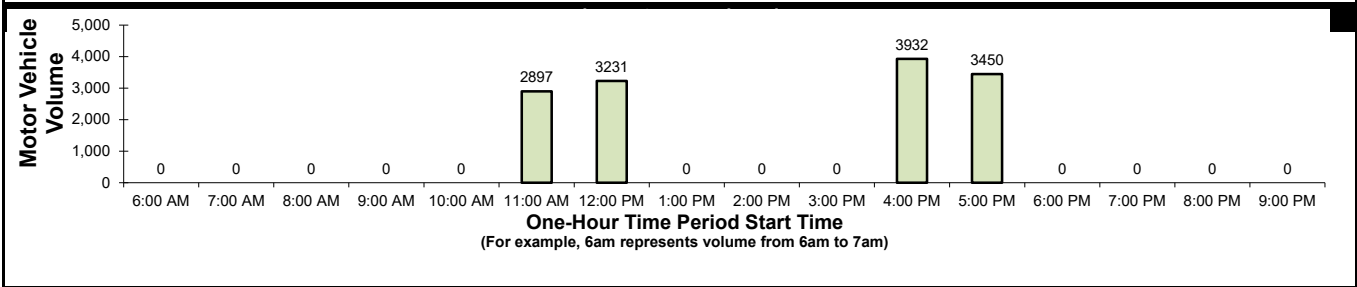
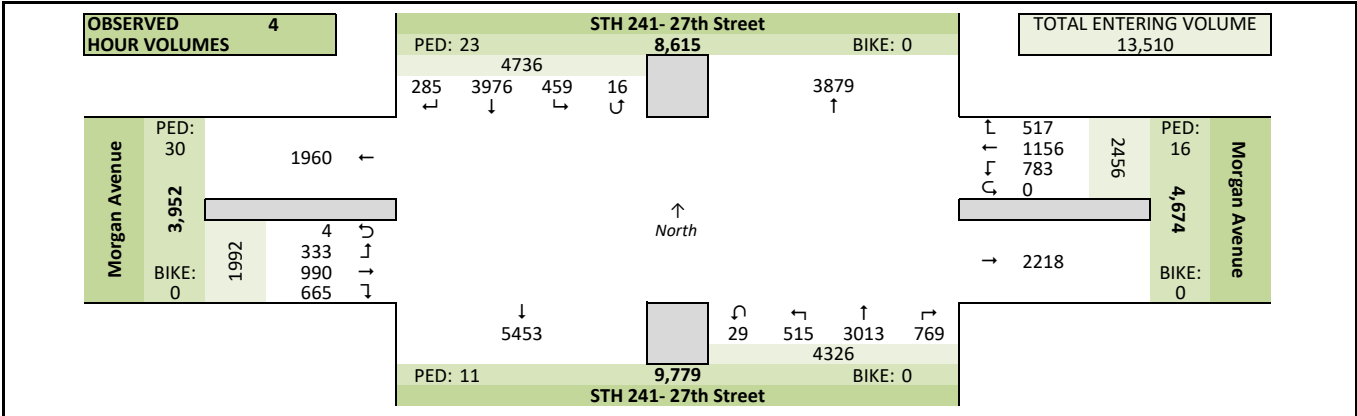
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	STH 241- 27th Street		
East Leg	Morgan Avenue		
South Leg	STH 241- 27th Street		
West Leg	Morgan Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

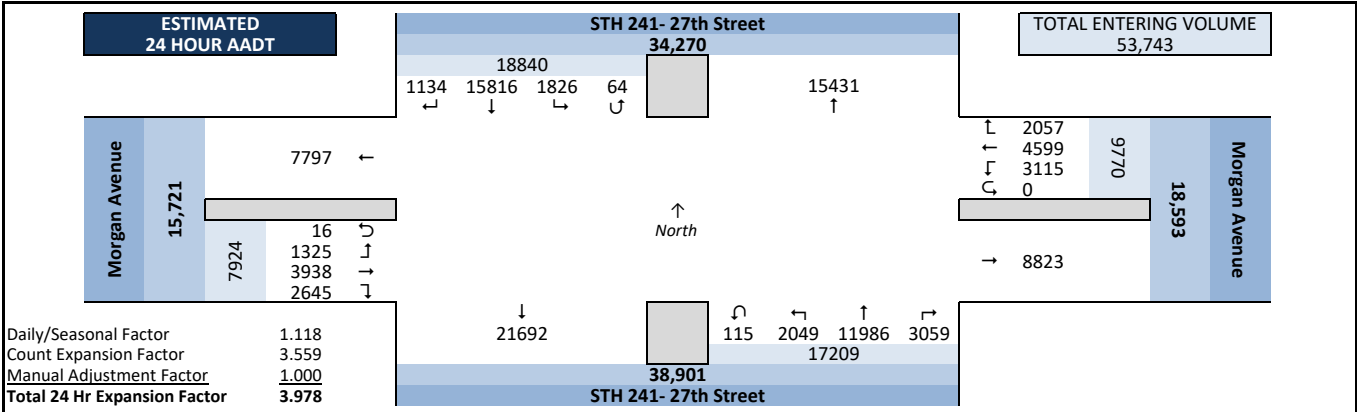
Count Information

Hrs Counted:	11:00 AM-01:00 PM and 04:00 PM-06:00 PM		
1st Day of Count	Thursday, January 26, 2023		Weather
AM Peak Period	Friday, January 27, 2023		Clear & Dry
Midday Peak Period	Friday, January 27, 2023		Clear & Dry
PM Peak Period	Thursday, January 26, 2023		Clear & Dry
Calculated Peak Hours			
	AM	MD	12:00-1:00pm
	PM	4:15-5:15pm	
Peak Hours Selected for Analysis			
	AM	MD	12:00-1:00pm
	PM	4:00-5:00pm	
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.118	Count Expansion Factor	3.559
Company Name	TADI, Inc		Manual Adj.
			1.000
Observers	AM Peak Period	None	
	Midday Peak Period	TADI - Video	
	PM Peak Period	TADI - Video	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4 Hour Volume Summary



Estimated 24 Hour AADT

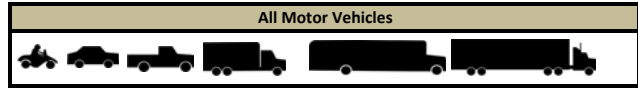


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Thursday, January 26, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

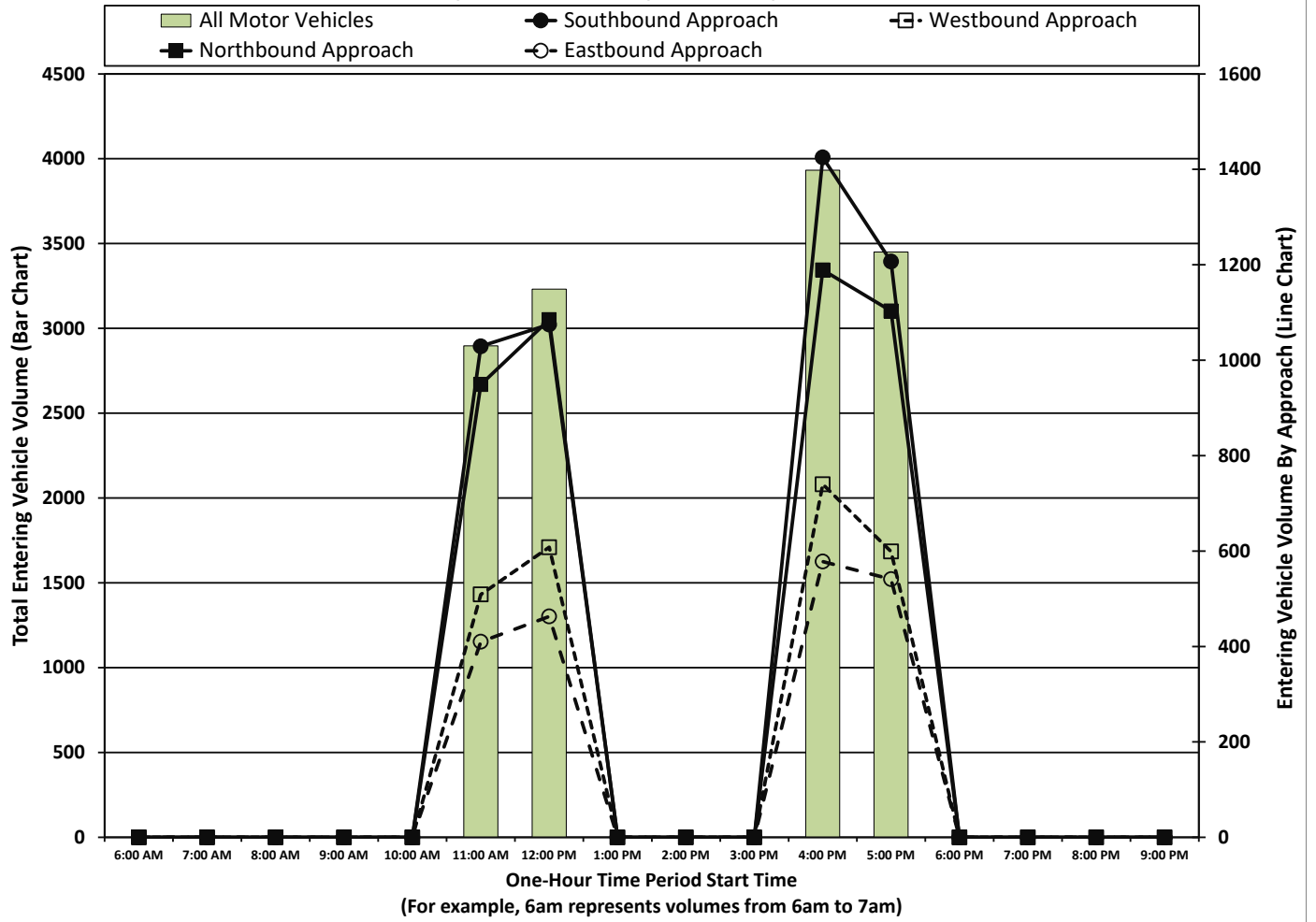
STH 241- 27th Street & Morgan Avenue



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	From North STH 241- 27th Street					From East Morgan Avenue					From South STH 241- 27th Street					From West Morgan Avenue					Total Vehicle Volume	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
	AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
MD	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	67	866	89	7	1029	119	205	185	0	509	169	680	94	6	949	146	183	79	2	410	2897	919	1978
	12:00 PM	71	877	123	4	1075	151	252	205	0	608	190	757	131	7	1085	156	215	91	1	463	3231	1071	2160
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	86	1198	137	4	1425	142	392	206	0	740	201	832	148	8	1189	196	311	71	0	578	3932	1318	2614
	5:00 PM	61	1035	110	1	1207	105	307	187	0	599	209	744	142	8	1103	167	281	92	1	541	3450	1140	2310
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	285	3976	459	16	4736	517	1156	783	0	2456	769	3013	515	29	4326	665	990	333	4	1992	13510	4448	9062	

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics			Page 11 of 13		
Start Date:	Thursday, January 26, 2023	Weekday	Schools in Session		
Total Number of Hours Counted:	4	Non-Holiday	No Special Events		

15-Minute Pedestrian and Bicyclist Data

STH 241- 27th Street & Morgan Avenue



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	STH 241- 27th Street			Morgan Avenue			STH 241- 27th Street			Morgan Avenue				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	1	0	1	0	0	0	1	0	1	2	0	2	4	16
11:15 AM	3	0	3	1	0	1	0	0	0	0	0	0	4	18
11:30 AM	2	0	2	1	0	1	0	0	0	0	0	0	3	21
11:45 AM	2	0	2	1	0	1	0	0	0	2	0	2	5	23
12:00 PM	1	0	1	2	0	2	2	0	2	1	0	1	6	23
12:15 PM	1	0	1	2	0	2	2	0	2	2	0	2	7	
12:30 PM	1	0	1	2	0	2	0	0	0	2	0	2	5	
12:45 PM	0	0	0	1	0	1	2	0	2	2	0	2	5	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	3	0	3	2	0	2	1	0	1	4	0	4	10	26
4:15 PM	0	0	0	0	0	0	1	0	1	1	0	1	2	24
4:30 PM	2	0	2	1	0	1	1	0	1	3	0	3	7	26
4:45 PM	2	0	2	0	0	0	0	0	0	5	0	5	7	21
5:00 PM	3	0	3	3	0	3	0	0	0	2	0	2	8	15
5:15 PM	1	0	1	0	0	0	1	0	1	2	0	2	4	
5:30 PM	1	0	1	0	0	0	0	0	0	1	0	1	2	
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	23	0	23	16	0	16	11	0	11	30	0	30	80	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Base Information, Observed (2) Hour and Estimated (24) Hour Volume Summaries

Major St: STH 241- 27th Street
 Minor St: Morgan Avenue
 Intersection of: STH 241- 27th Street & Morgan Avenue

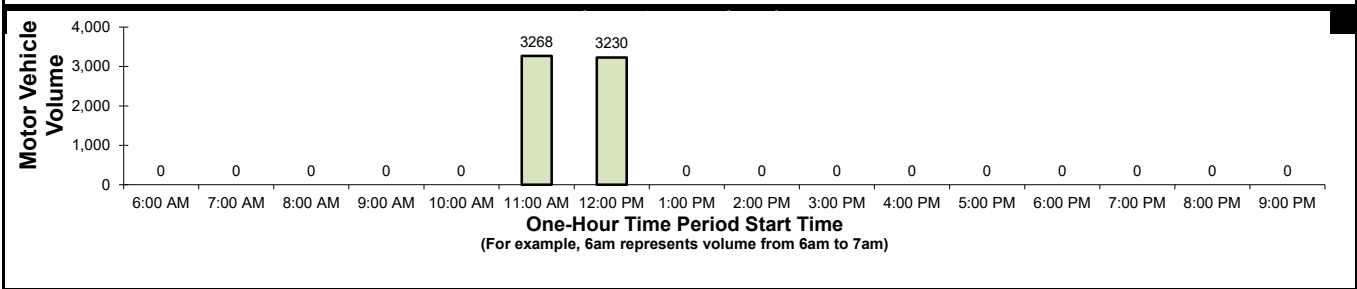
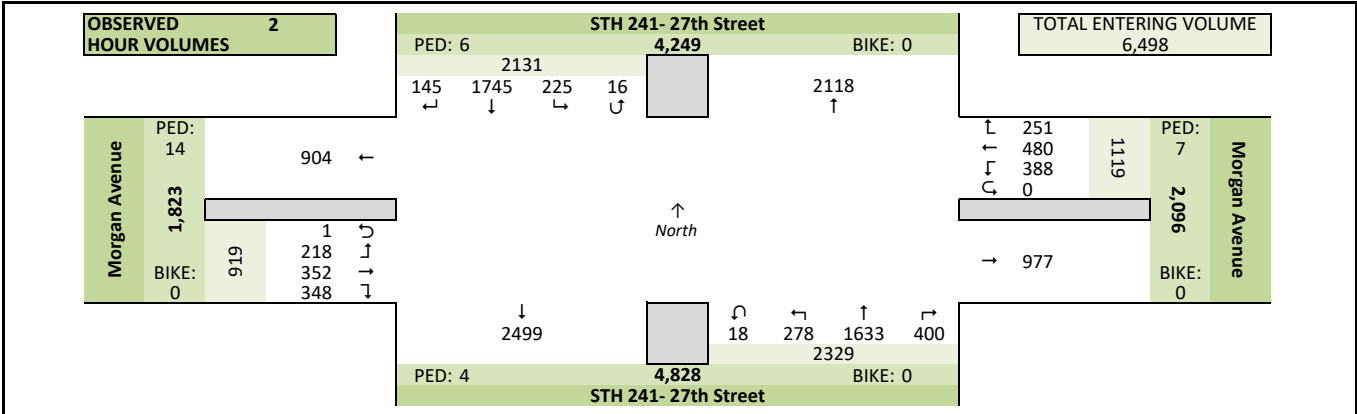
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	STH 241- 27th Street		
East Leg	Morgan Avenue		
South Leg	STH 241- 27th Street		
West Leg	Morgan Avenue		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

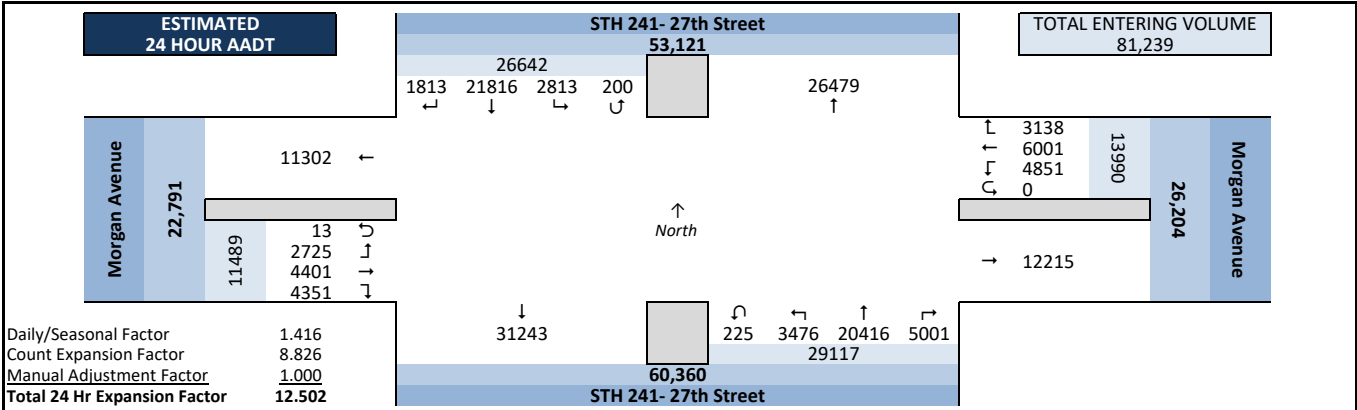
Count Information

Hrs Counted:	11:00 AM-01:00 PM		
1st Day of Count	Saturday, January 28, 2023	Weather	
AM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Midday Peak Period	Saturday, January 28, 2023	Clear & Dry	
PM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Calculated Peak Hours			
	AM	MD	11:00-12:00am
Peak Hours Selected for Analysis			
	AM	MD	11:45-12:45pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.416	Count Expansion Factor	8.826
Company Name	TADI, Inc	Manual Adj.	1.000
Observers	AM Peak Period	None	
	Midday Peak Period	TADI - Video	
	PM Peak Period	None	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 2 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

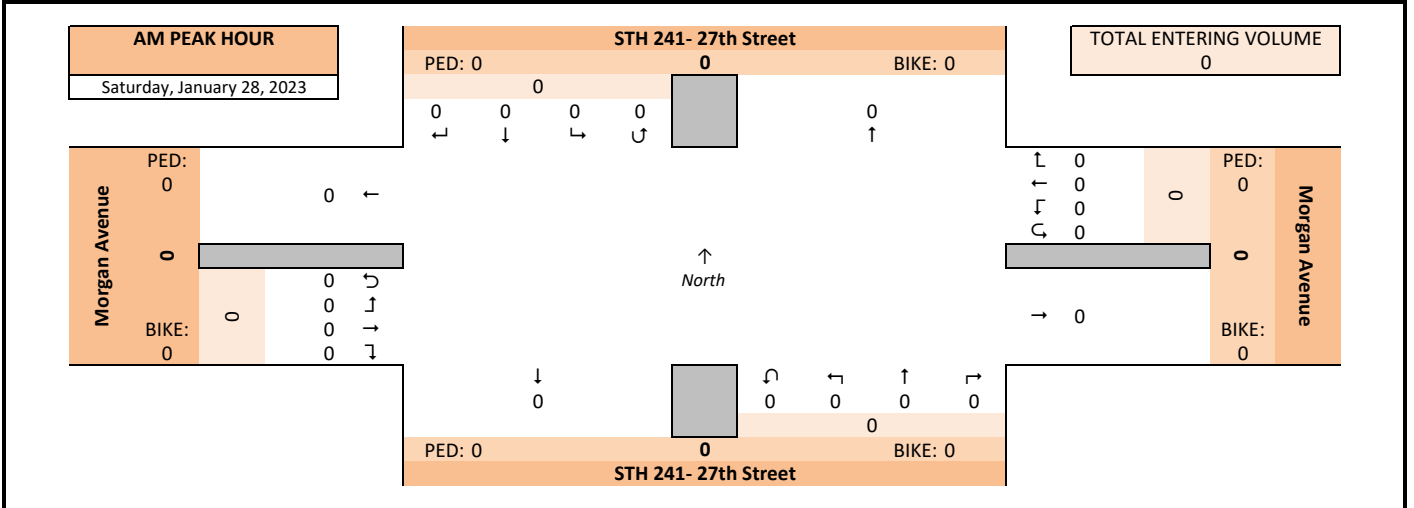
Count Basics		Page 2 of 13	
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

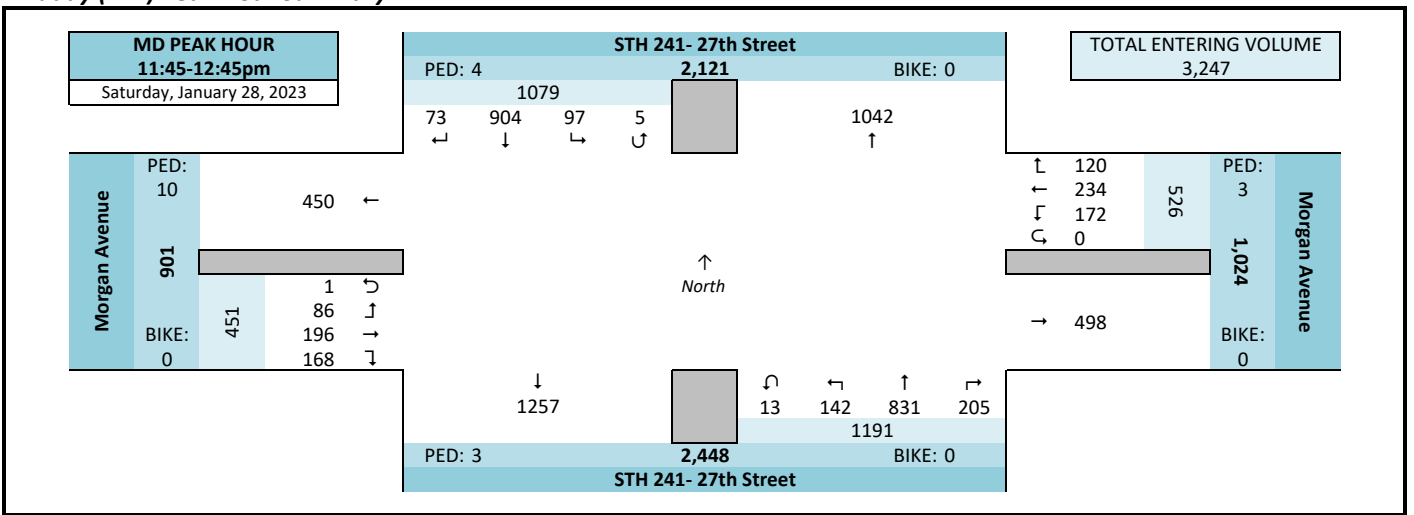
STH 241- 27th Street & Morgan Avenue



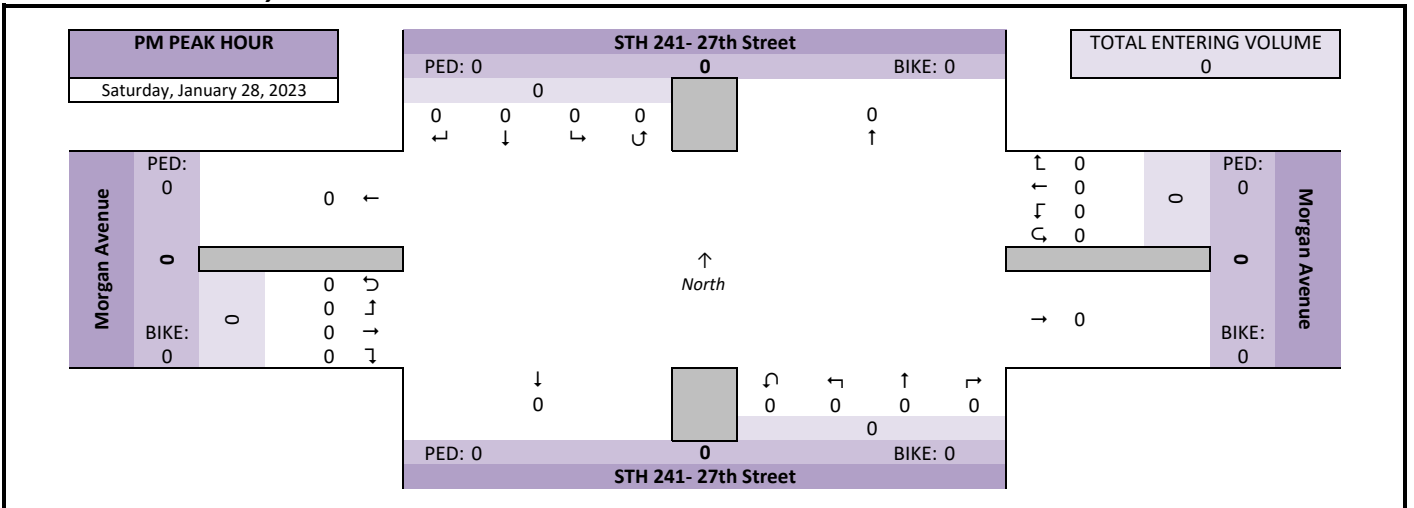
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

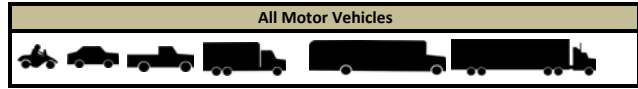


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

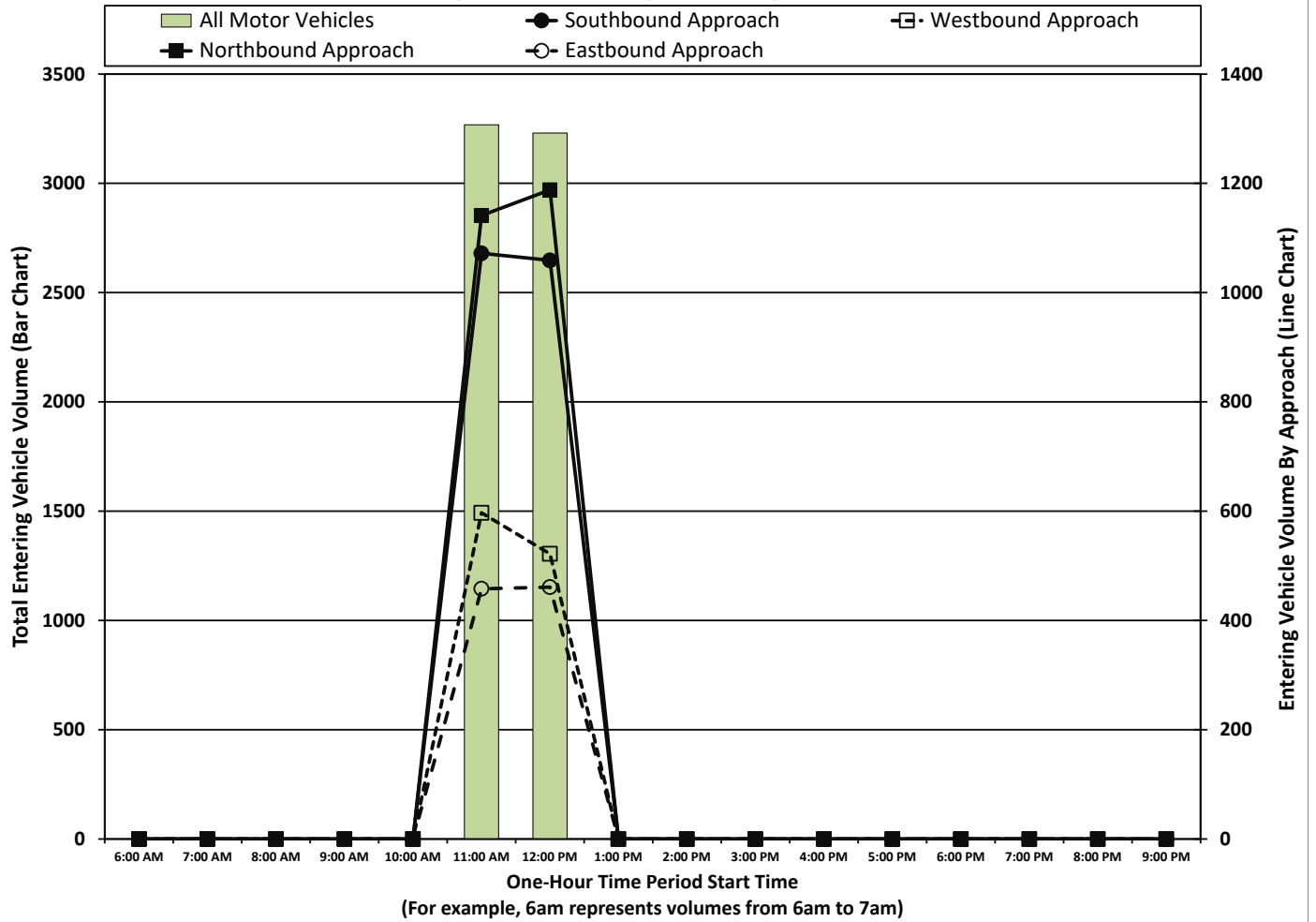
STH 241- 27th Street & Morgan Avenue



One-Hour Motor Vehicle Data

One-Hour Time Period	From North STH 241- 27th Street					From East Morgan Avenue					From South STH 241- 27th Street					From West Morgan Avenue					Total Vehicle Volume	Directional Volume Totals	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S
	Start Time																						
AM																							
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MD																							
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	60	888	114	10	1072	125	254	218	0	597	195	804	137	5	1141	167	163	128	0	458	3268	1055	2213
12:00 PM	85	857	111	6	1059	126	226	170	0	522	205	829	141	13	1188	181	189	90	1	461	3230	983	2247
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM																							
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	145	1745	225	16	2131	251	480	388	0	1119	400	1633	278	18	2329	348	352	218	1	919	6498	2038	4460

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics		Page 11 of 13	
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

STH 241- 27th Street & Morgan Avenue



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	STH 241- 27th Street			Morgan Avenue			STH 241- 27th Street			Morgan Avenue				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
11:15 AM	0	0	0	1	0	1	0	0	0	0	0	0	1	12
11:30 AM	0	0	0	2	0	2	0	0	0	3	0	3	5	17
11:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	2	20
12:00 PM	2	0	2	0	0	0	1	0	1	1	0	1	4	23
12:15 PM	1	0	1	2	0	2	1	0	1	2	0	2	6	
12:30 PM	1	0	1	1	0	1	1	0	1	5	0	5	8	
12:45 PM	2	0	2	1	0	1	1	0	1	1	0	1	5	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	6	0	6	7	0	7	4	0	4	14	0	14	31	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Thursday, January 26, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Base Information, Observed (4) Hour and Estimated (24) Hour Volume Summaries

Major St: STH 241-27th Street
 Minor St: Loomis Road
 Intersection of: STH 241-27th Street & Loomis Road

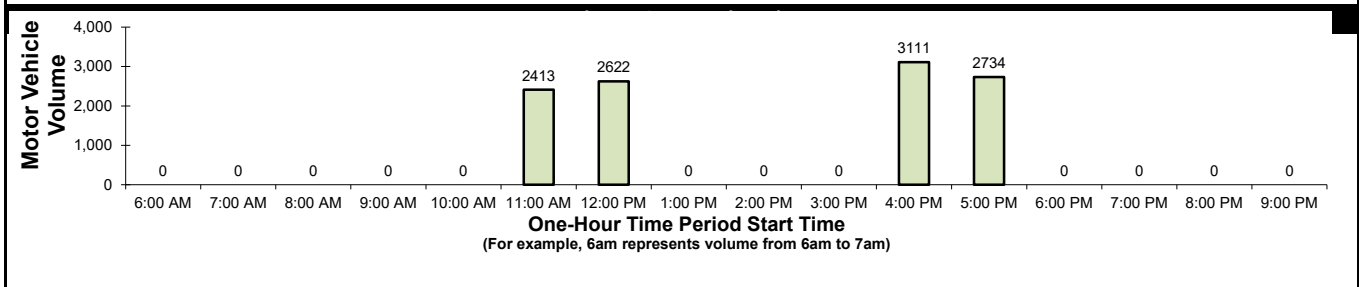
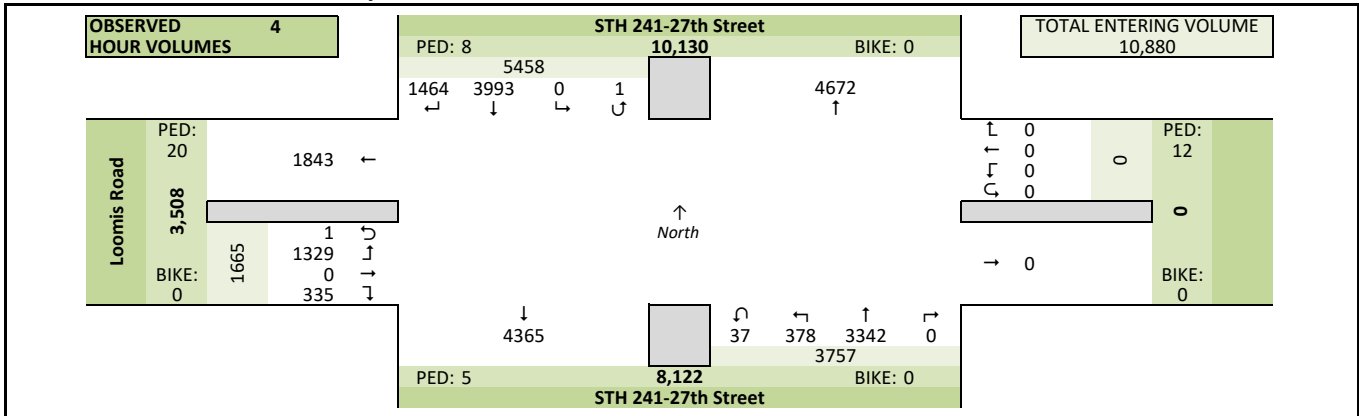
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	STH 241-27th Street		
East Leg			
South Leg	STH 241-27th Street		
West Leg	Loomis Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

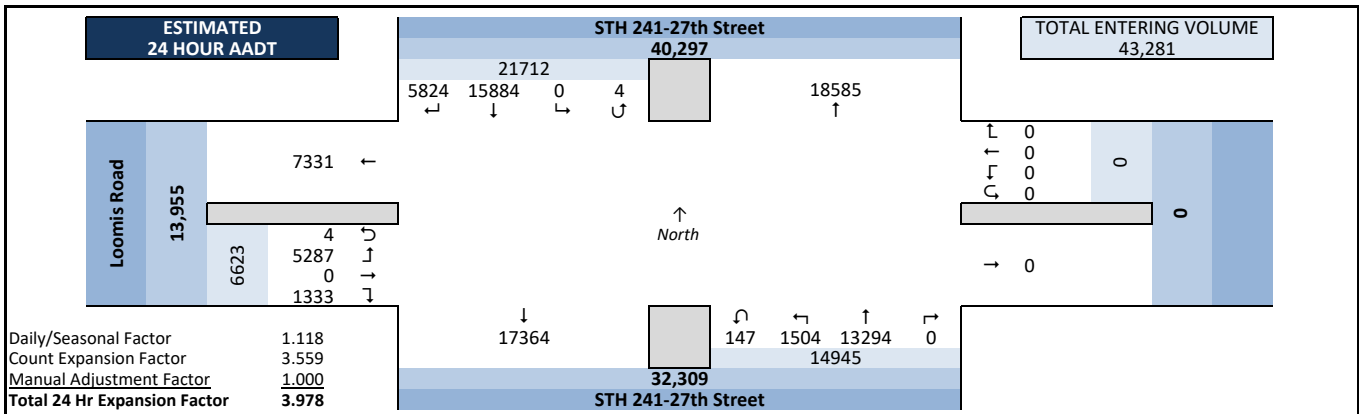
Count Information

Hrs Counted:	11:00 AM-01:00 PM and 04:00 PM-06:00 PM		
1st Day of Count	Thursday, January 26, 2023		Weather
AM Peak Period	Friday, January 27, 2023		Clear & Dry
Midday Peak Period	Friday, January 27, 2023		Clear & Dry
PM Peak Period	Thursday, January 26, 2023		Clear & Dry
Calculated Peak Hours			
	AM	MD	12:00-1:00pm
			PM 4:00-5:00pm
Peak Hours Selected for Analysis			
	AM	MD	12:00-1:00pm
			PM 4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.118	Count Expansion Factor	3.559
Company Name	TADI, Inc		Manual Adj. 1.000
Observers	AM Peak Period	None	
	Midday Peak Period	TADI - Video	
	PM Peak Period	TADI - Video	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4 Hour Volume Summary



Estimated 24 Hour AADT

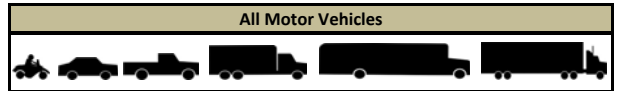


Intersection Traffic Volume Report

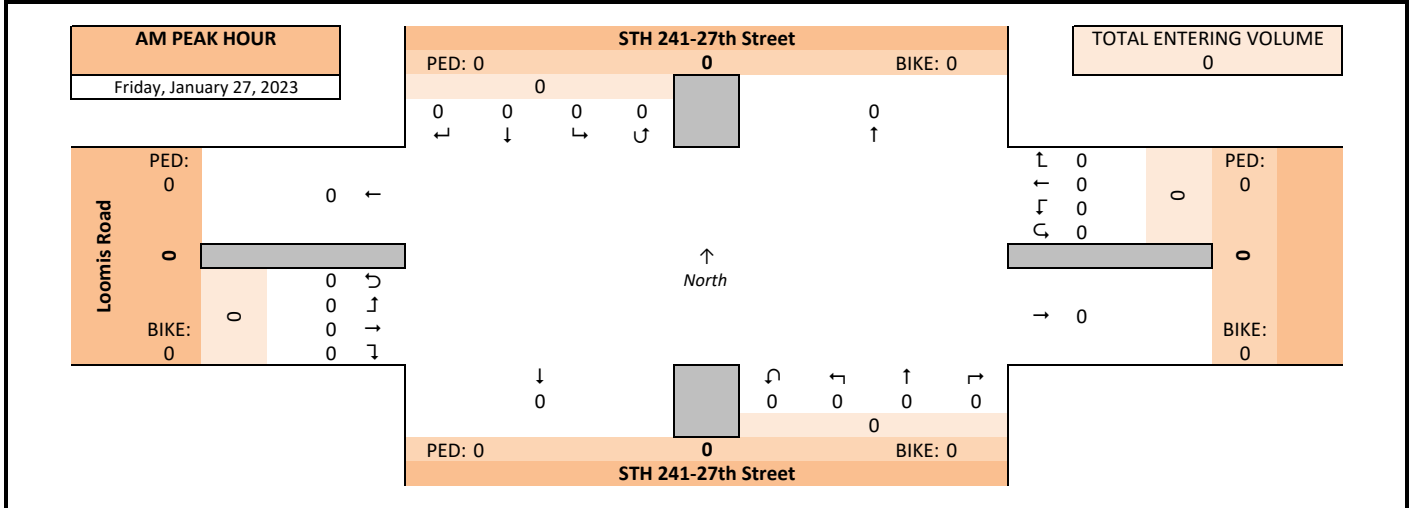
Count Basics			Page 2 of 13
Start Date:	Thursday, January 26, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

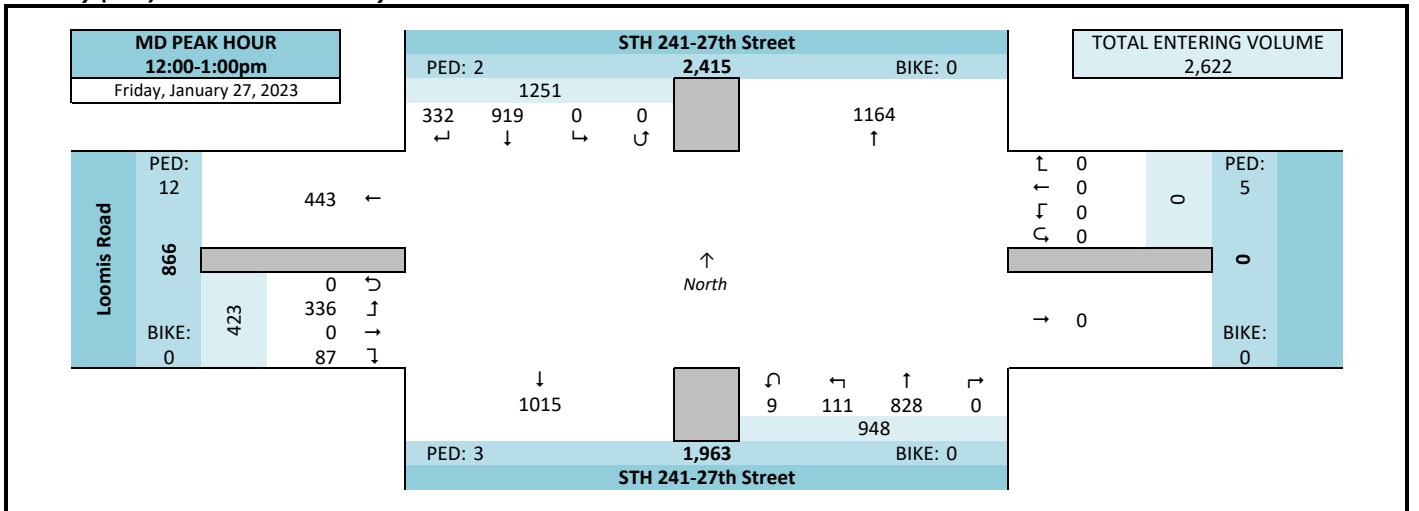
STH 241-27th Street & Loomis Road



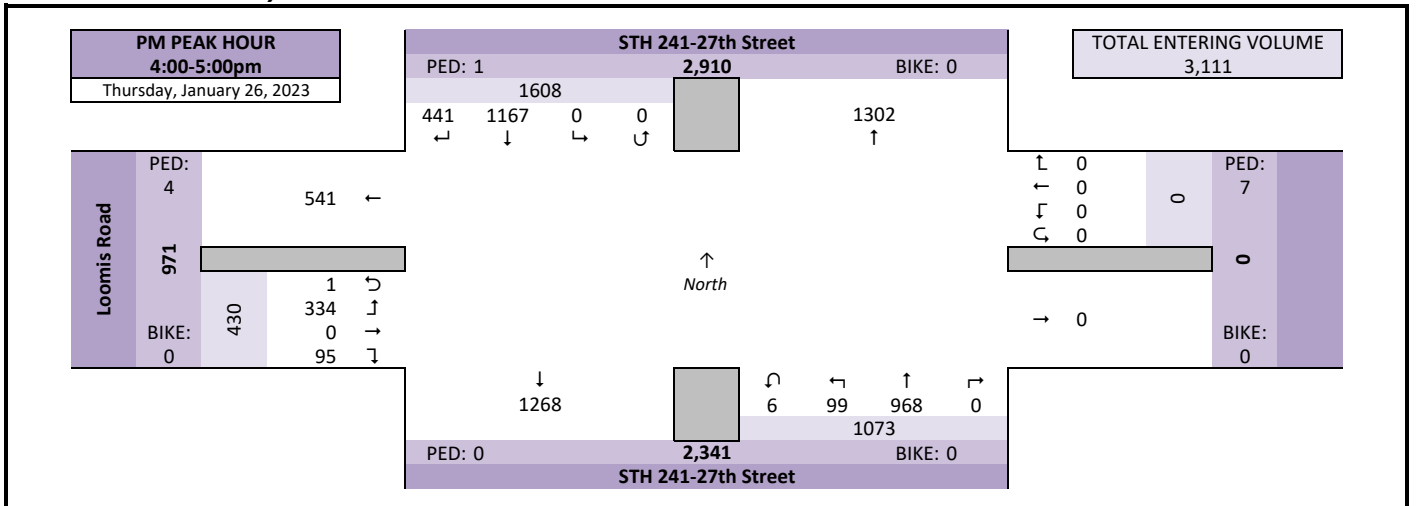
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

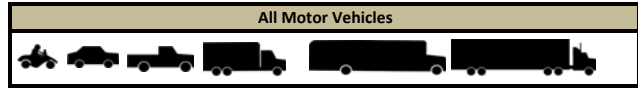


Intersection Traffic Volume Report

Count Basics			<i>Page 4 of 13</i>
Start Date:	Thursday, January 26, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

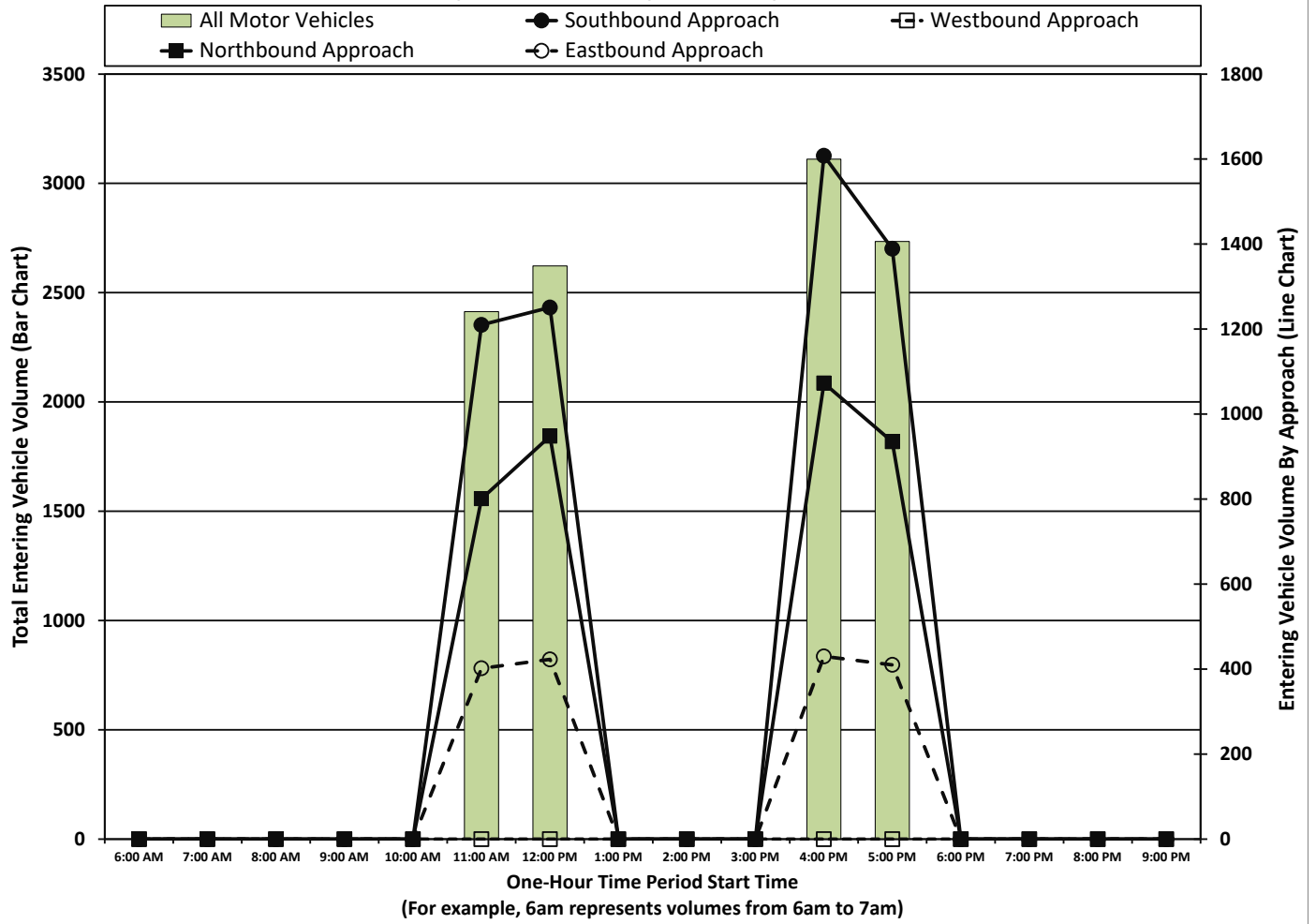
STH 241-27th Street & Loomis Road



One-Hour Motor Vehicle Data

One-Hour Time Period	From North STH 241-27th Street					From East					From South STH 241-27th Street					From West Loomis Road					Total Vehicle	Directional Volume Totals	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S
	Start Time																						
AM																							
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
MD																							
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	314	896	0	0	1210	0	0	0	0	0	0	698	90	13	801	71	0	331	0	402	2413	402	2011
12:00 PM	332	919	0	0	1251	0	0	0	0	0	0	828	111	9	948	87	0	336	0	423	2622	423	2199
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM																							
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	441	1167	0	0	1608	0	0	0	0	0	0	968	99	6	1073	95	0	334	1	430	3111	430	2681
5:00 PM	377	1011	0	1	1389	0	0	0	0	0	0	848	78	9	935	82	0	328	0	410	2734	410	2324
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	1464	3993	0	1	5458	0	0	0	0	0	0	3342	378	37	3757	335	0	1329	1	1665	10880	1665	9215

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics Page 12 of 13
Start Date: Thursday, January 26, 2023
Total Number of Hours Counted: 4

15-Minute Adult & Children Count (Manual Entry)

STH 241-27th Street & Loomis Road



15-Minute Adult & Children Pedestrian Data

Table with columns: 15-Minute Time Period, Start Time, North Approach, East Approach, South Approach, West Approach, Adults, Children, Totals. Rows include Pre-AM Peak Period, AM Peak Period, Midday Peak Period, PM Peak Period, and Post PM Peak Period.

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Base Information, Observed (2) Hour and Estimated (24) Hour Volume Summaries

Major St: STH 241-27th Street
 Minor St: Loomis Road
 Intersection of: STH 241-27th Street & Loomis Road

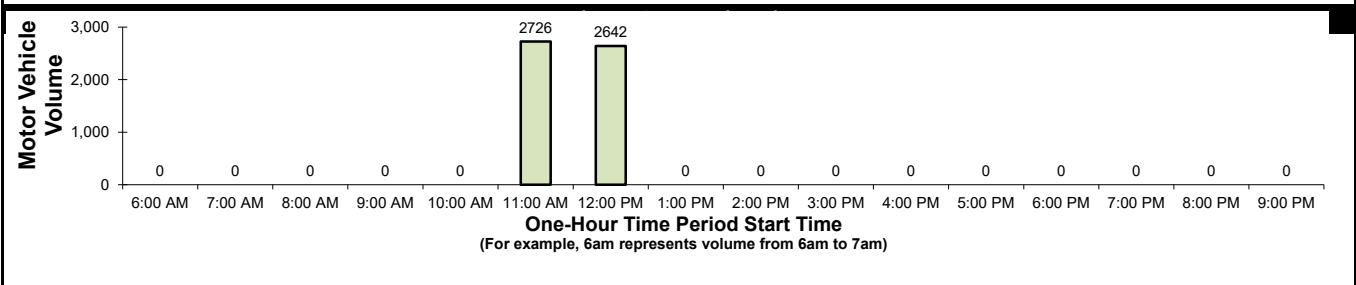
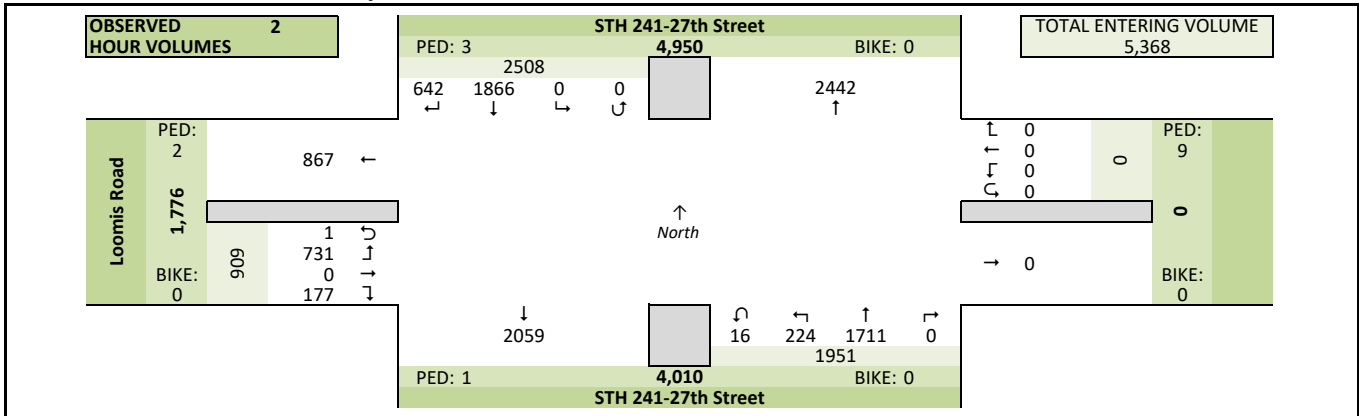
Site Information

Municipality	City of Milwaukee		
County	40 - Milwaukee	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names	North Direction	↑	
North Leg	STH 241-27th Street		
East Leg			
South Leg	STH 241-27th Street		
West Leg	Loomis Road		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
	Pre-school children	None	
	Elementary school age children	None	
	Visually impaired (white cane/helper dog)	None	
	Elderly/disabled (except wheelchairs)	None	
	Wheelchairs/electric scooters	None	
Other (describe)	None	None	

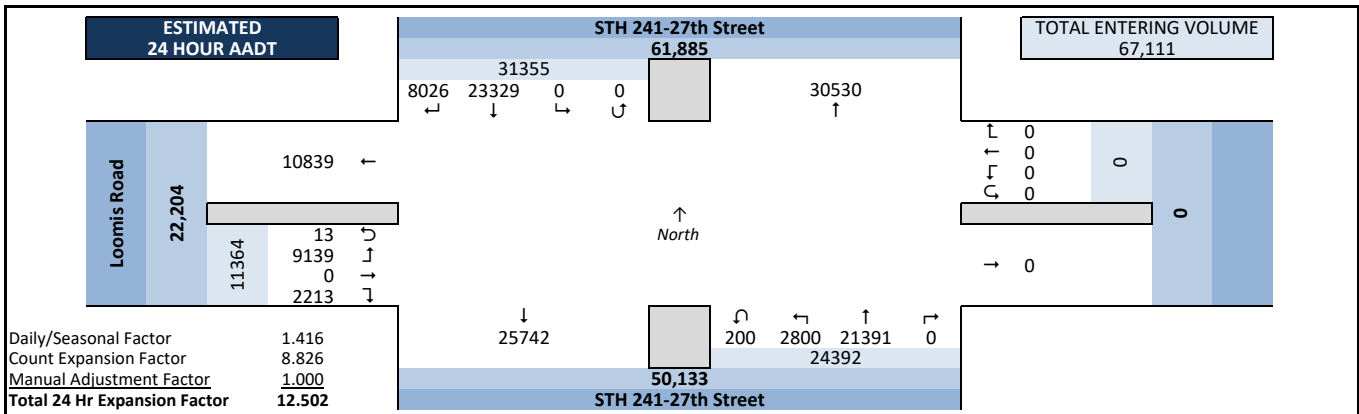
Count Information

Hrs Counted:	11:00 AM-01:00 PM		
1st Day of Count	Saturday, January 28, 2023	Weather	
AM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Midday Peak Period	Saturday, January 28, 2023	Clear & Dry	
PM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Calculated Peak Hours			
	AM	MD	11:30-12:30am
Peak Hours Selected for Analysis			
	AM	MD	11:45-12:45pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.416	Count Expansion Factor	8.826
Company Name	TADI, Inc	Manual Adj.	1.000
Observers	AM Peak Period	None	
	Midday Peak Period	TADI	
	PM Peak Period	None	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 2 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

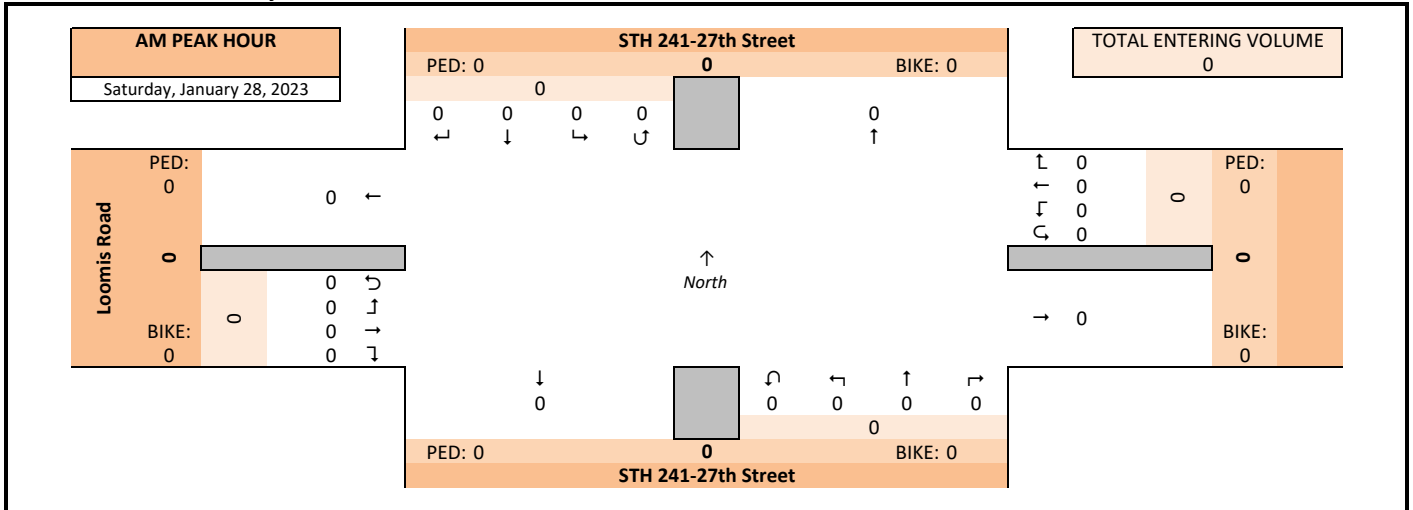
Count Basics		Page 2 of 13	
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

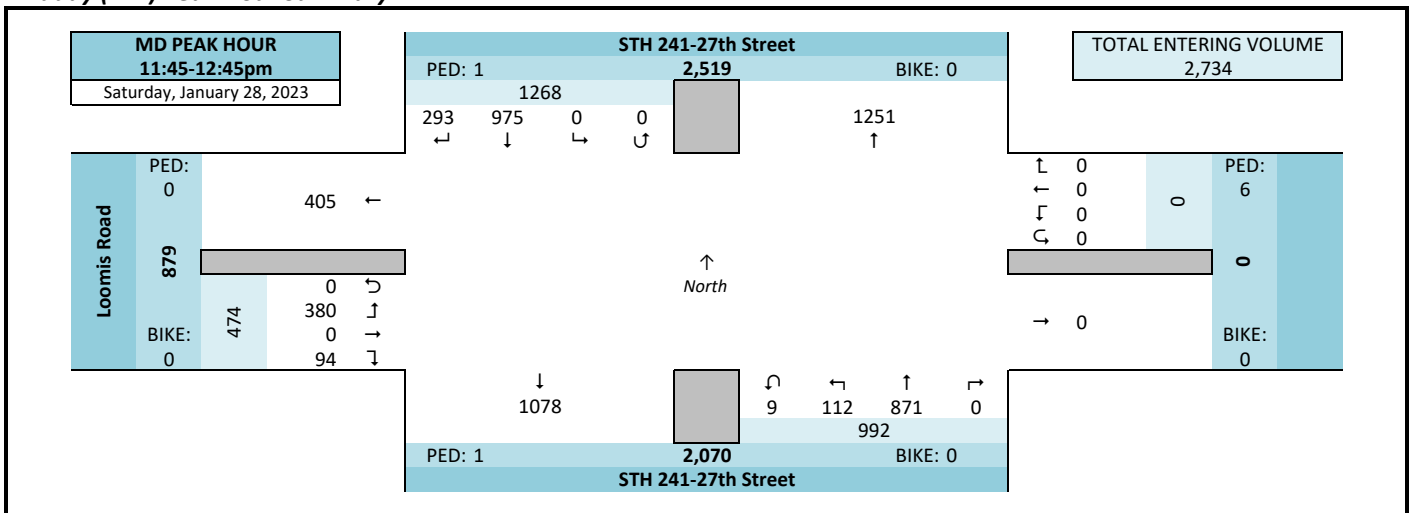
STH 241-27th Street & Loomis Road



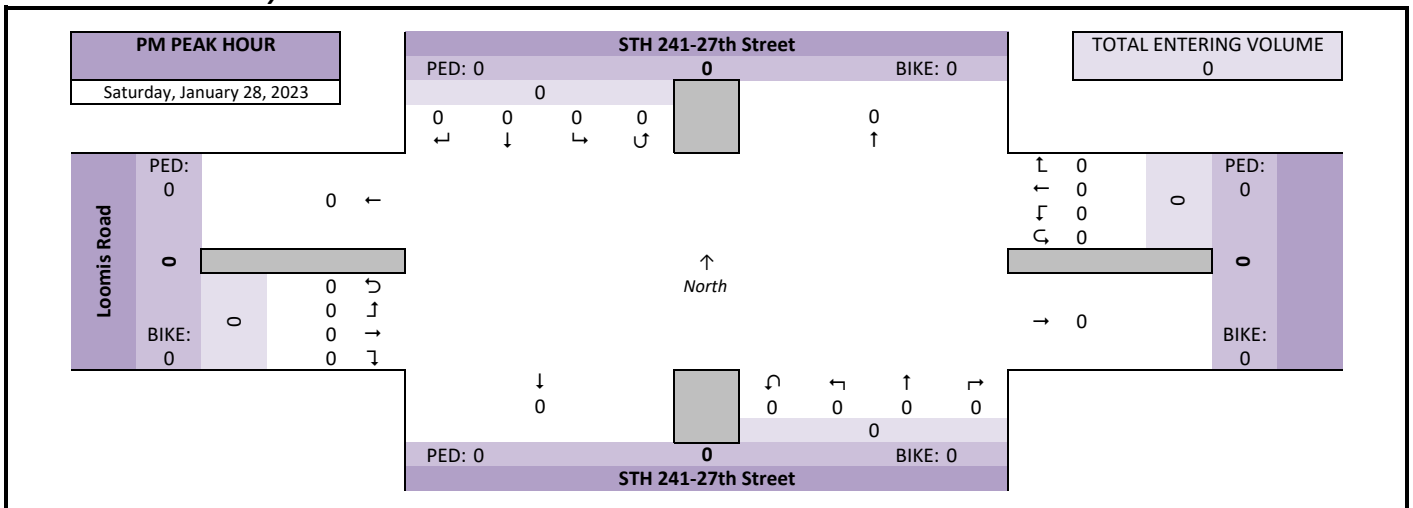
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

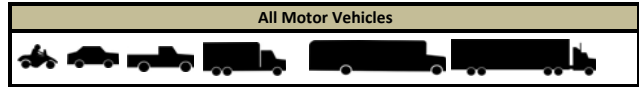


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

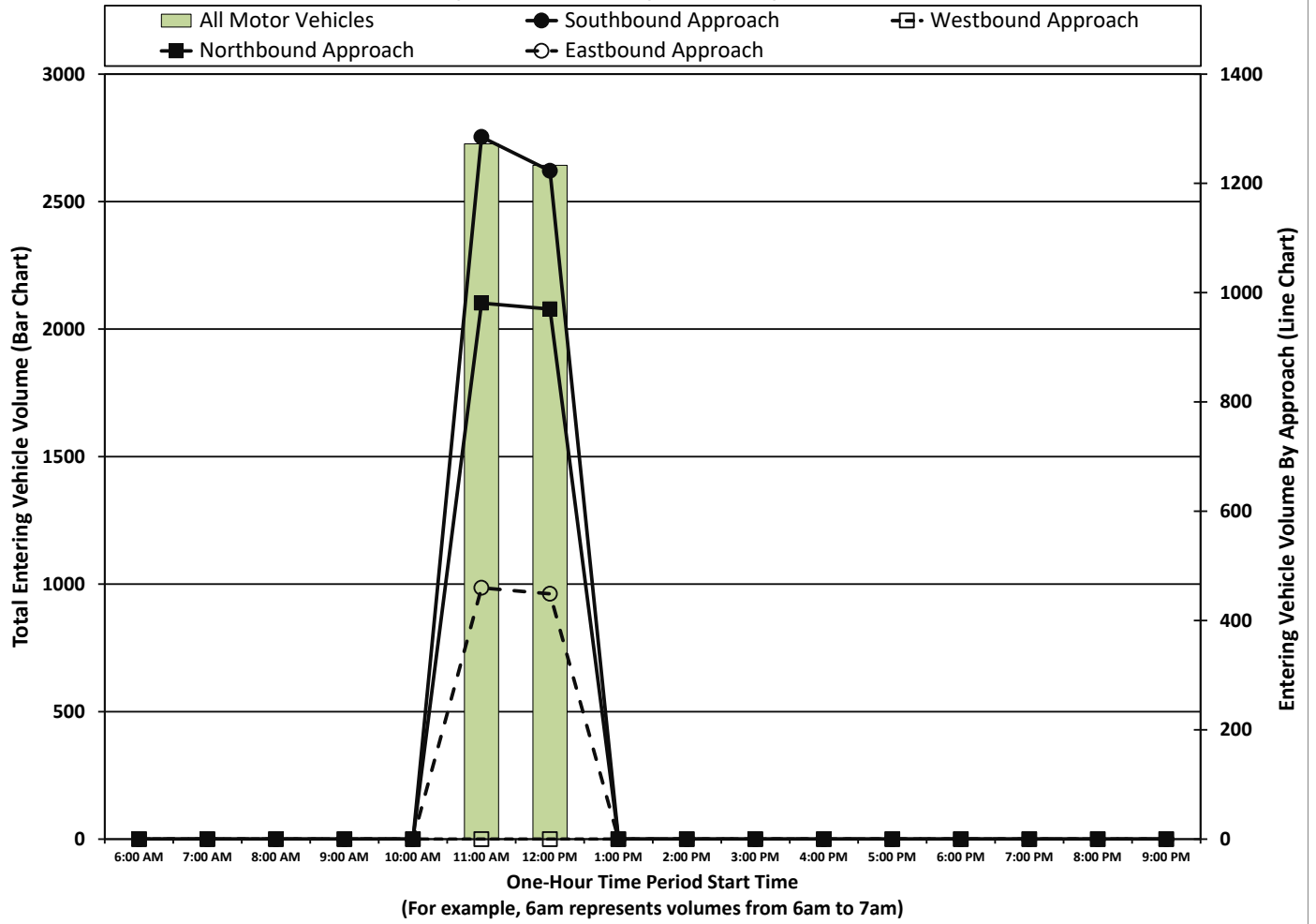
STH 241-27th Street & Loomis Road



One-Hour Motor Vehicle Data

One-Hour Time Period	From North ↓ STH 241-27th Street					From East ←					From South ↑ STH 241-27th Street					From West → Loomis Road					Total Vehicle Volume	Directional Volume Totals		
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		E/W	N/S	
AM	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:00 AM	341	944	0	0	1285	0	0	0	0	0	849	125	7	981	89	0	370	1	460	2726	460	2266	
	12:00 PM	301	922	0	0	1223	0	0	0	0	0	862	99	9	970	88	0	361	0	449	2642	449	2193	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		642	1866	0	0	2508	0	0	0	0	0	1711	224	16	1951	177	0	731	1	909	5368	909	4459	

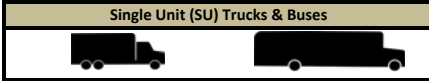
Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

15-Minute Single Unit (SU) Truck & Bus Data

STH 241-27th Street & Loomis Road



15-Minute Single Unit (SU) Truck & Bus Data

15-Minute Time Period	From North ↓ STH 241-27th Street					From East ←					From South ↑ STH 241-27th Street					From West → Loomis Road					15-Min Totals	Hourly Sum	
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	[Peak Period Rows]																						
Midday Peak Period	[Midday Peak Period Rows]																						
PM Peak Period	[PM Peak Period Rows]																						
Totals	14	22	0	0	36	0	0	0	0	0	0	0	18	1	0	19	1	0	4	0	5	60	

Peak Hour Single Unit (SU) Truck & Buses Volume Summary

Hourly Time Period	From North ↓ STH 241-27th Street					From East ←					From South ↑ STH 241-27th Street					From West → Loomis Road					Total Hourly Volume
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 11:45 AM	8	12	0	0	20	0	0	0	0	0	0	9	1	0	10	1	0	3	0	4	34
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Counts at Existing Chick-fil-A Site
South 76th Street

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Base Information, Observed (4) Hour and Estimated (24) Hour Volume Summaries

Major St: 76th Street Location
 Minor St: North CFA DW
 Intersection of: 76th Street Location & North CFA DW

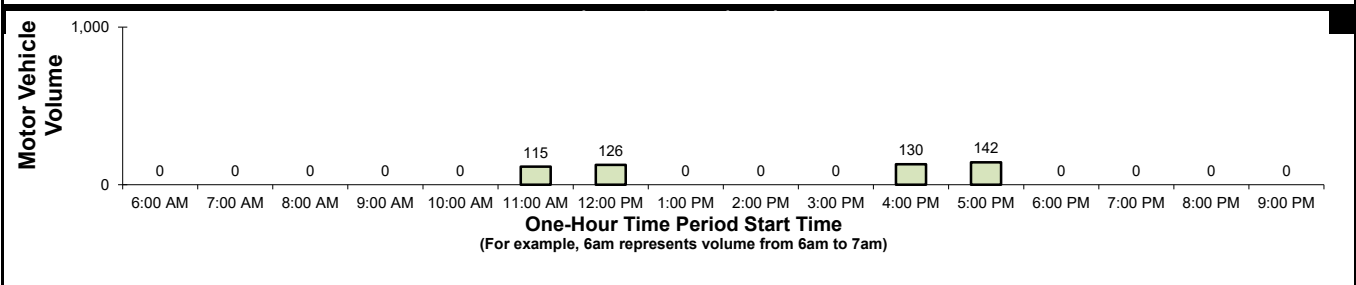
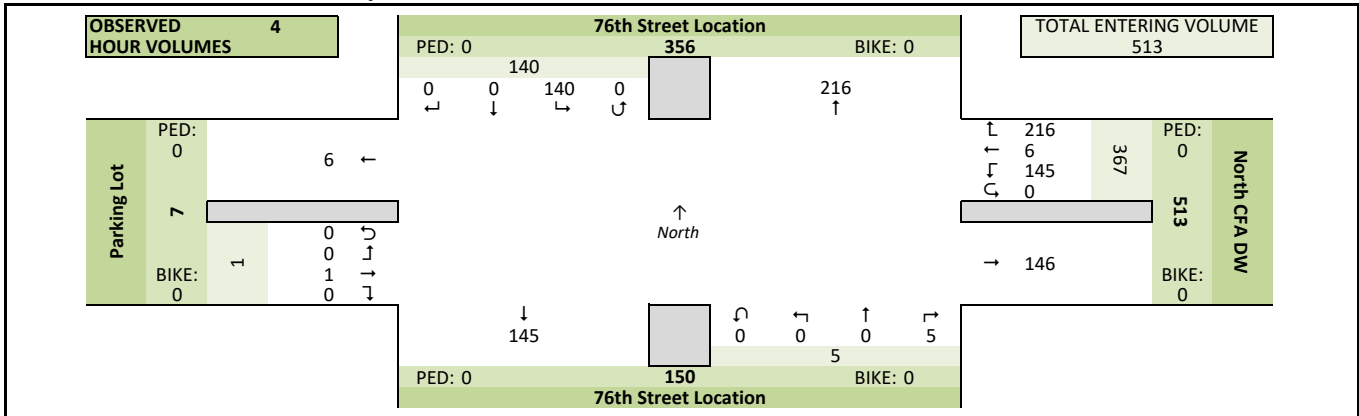
Site Information

Municipality	Village of Greendale
County	40 - Milwaukee
WisDOT Region	SE
Traffic Control	Uncontrolled
Roadway Names	North Direction ↑
North Leg	76th Street Location
East Leg	North CFA DW
South Leg	76th Street Location
West Leg	Parking Lot
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None None

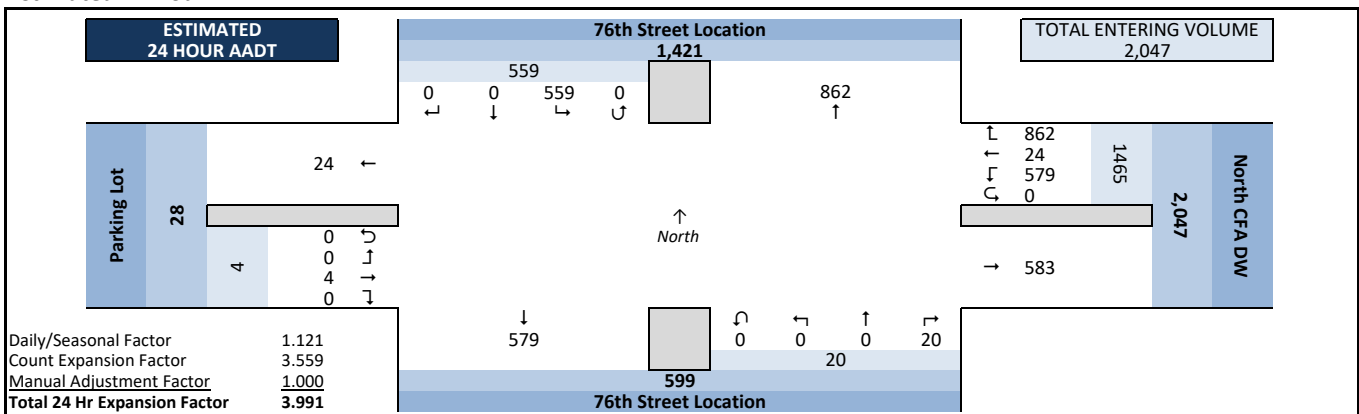
Count Information

Hrs Counted:	11:00 AM-01:00 PM and 04:00 PM-06:00 PM		
1st Day of Count	Wednesday, January 25, 2023	Weather	
AM Peak Period	Friday, January 27, 2023	Clear & Dry	
Midday Peak Period	Friday, January 27, 2023	Clear & Dry	
PM Peak Period	Wednesday, January 25, 2023	Clear & Dry	
Calculated Peak Hours			
AM	MD	11:15-12:15am	PM 4:45-5:45pm
Peak Hours Selected for Analysis			
AM	MD	12:00-1:00pm	PM 4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.121	Count Expansion Factor	3.559
Company Name	TADI, Inc	Manual Adj.	1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Jane Fait	
	PM Peak Period	Amy Scheuerlein	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4 Hour Volume Summary



Estimated 24 Hour AADT

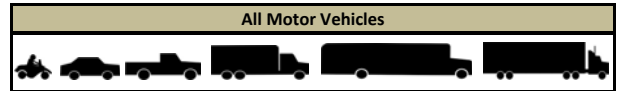


Intersection Traffic Volume Report

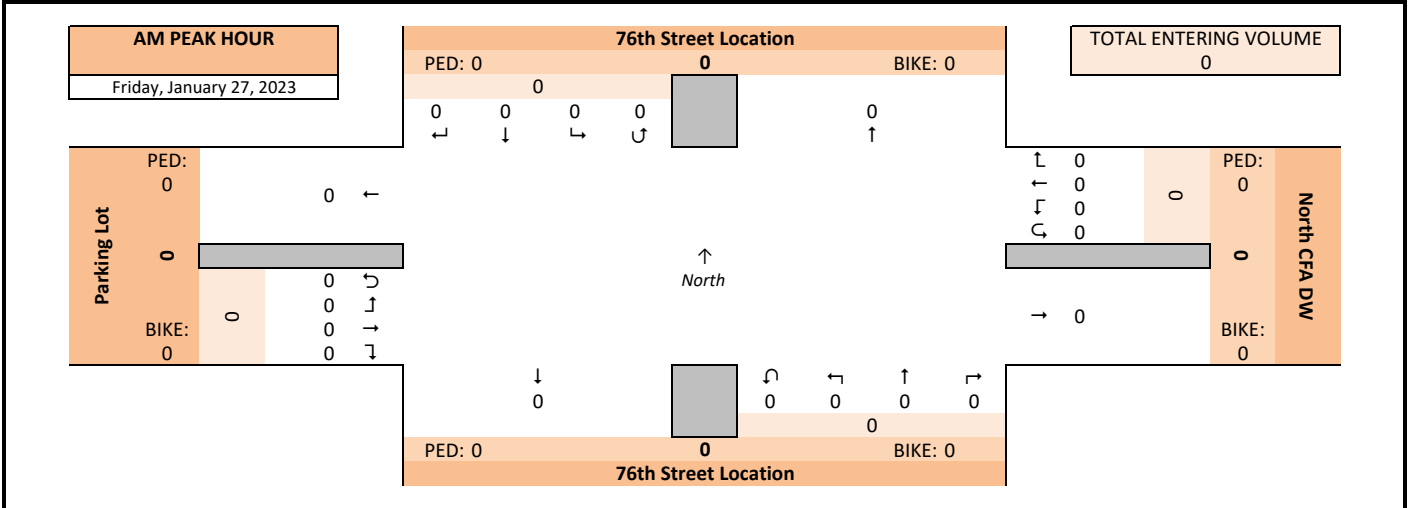
Count Basics		Page 2 of 13	
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

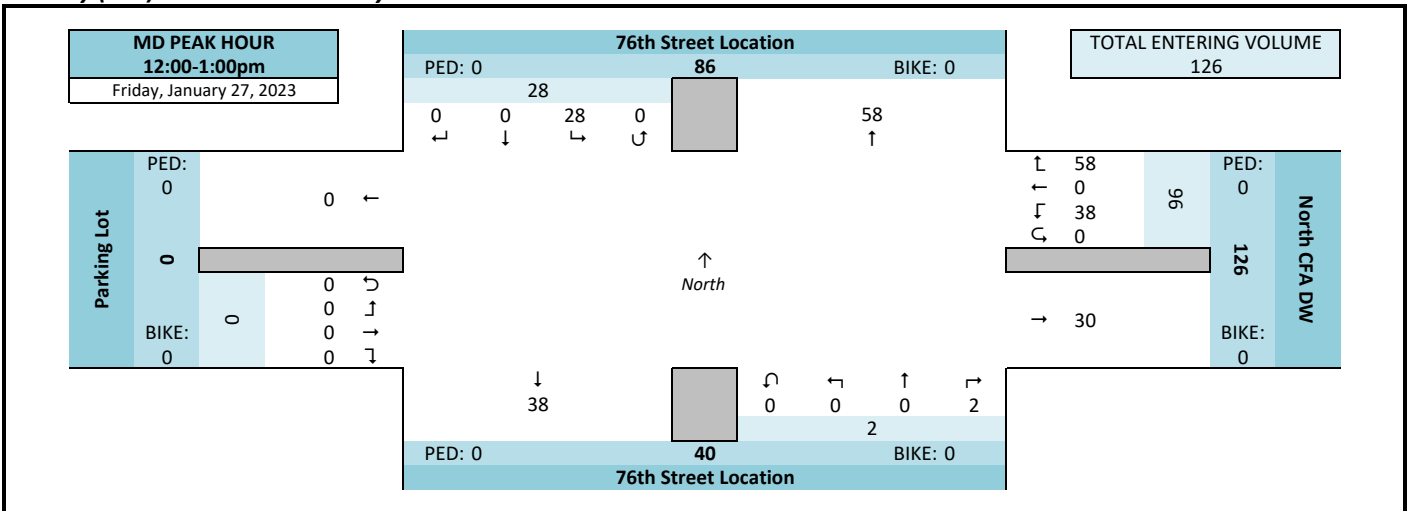
76th Street Location & North CFA DW



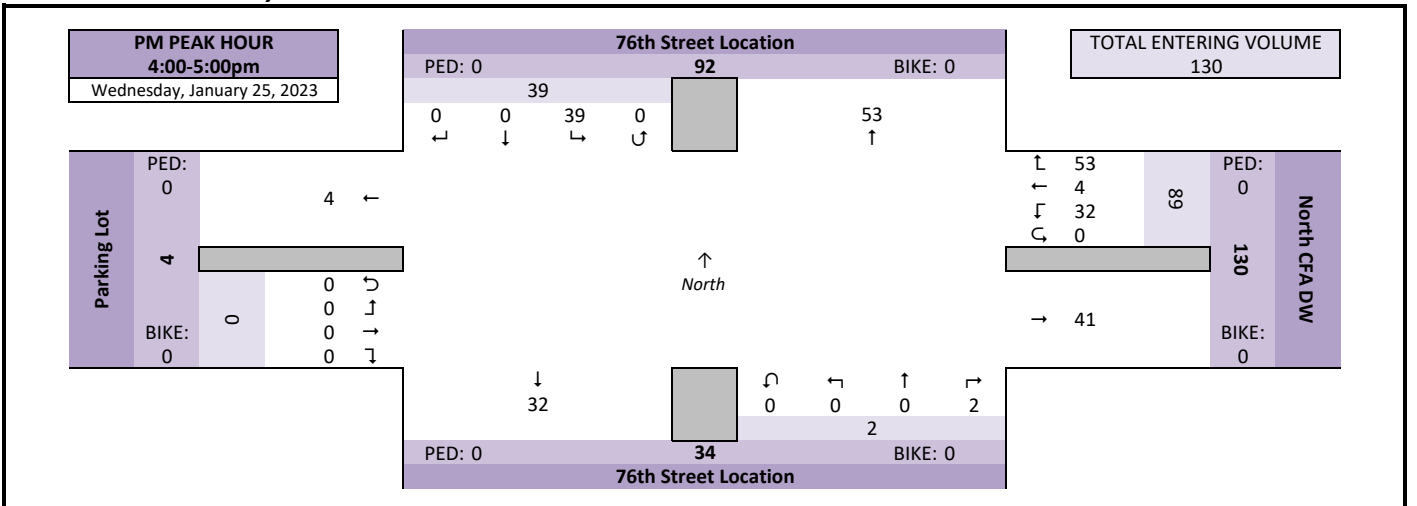
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

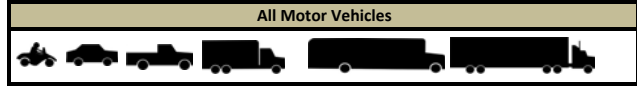


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

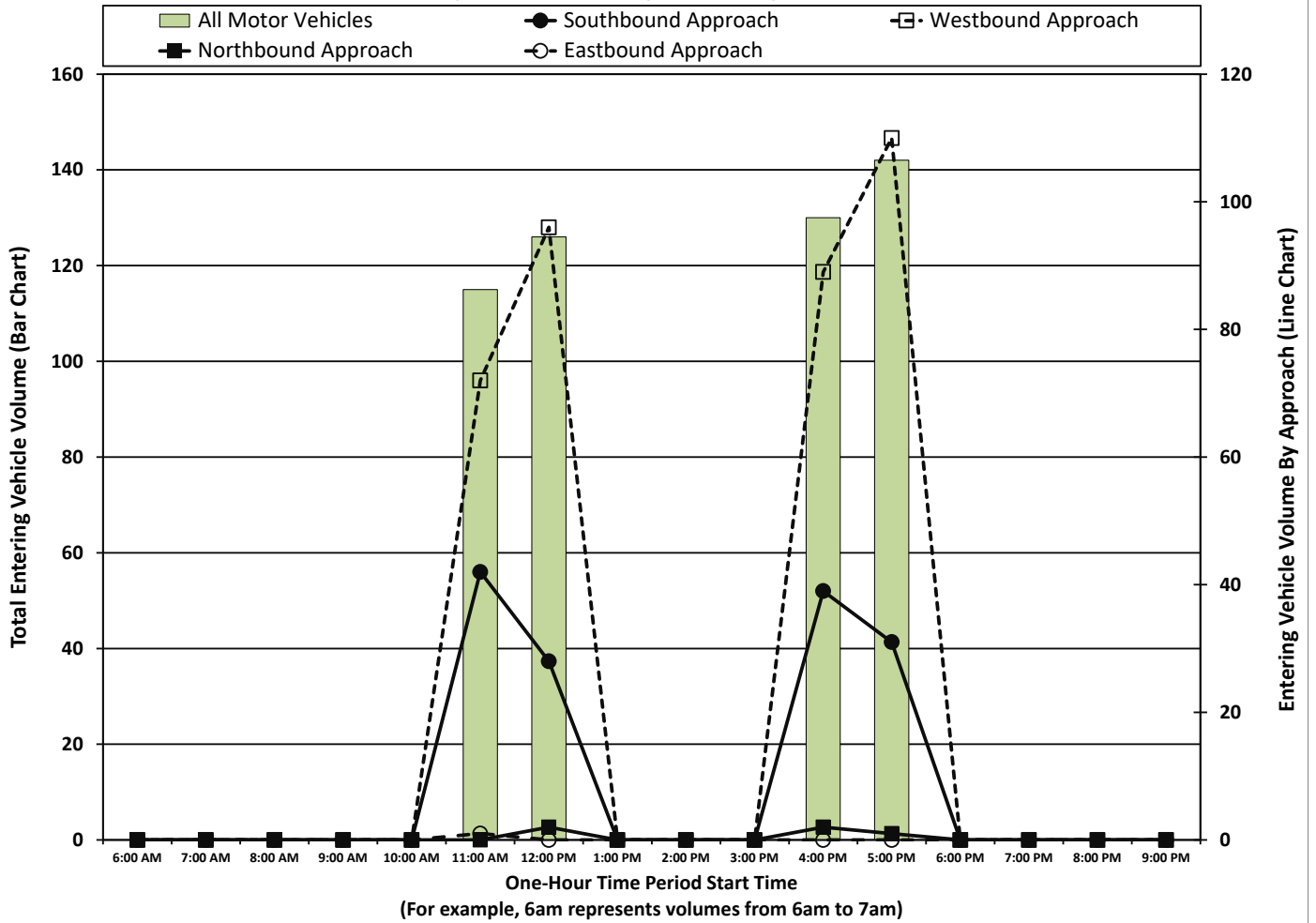
76th Street Location & North CFA DW



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	From North				From East				From South				From West				Total Vehicle Volume	Directional Volume Totals							
	76th Street Location				North CFA DW				76th Street Location				Parking Lot					E/W	N/S						
	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn									
AM																									
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD																									
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	42	0	42	41	0	31	0	72	0	0	0	0	0	0	1	0	0	1	115	73	42	0	0
12:00 PM	0	0	28	0	28	58	0	38	0	96	2	0	0	0	2	0	0	0	0	126	96	30	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM																									
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	39	0	39	53	4	32	0	89	2	0	0	0	2	0	0	0	0	130	89	41	0	0	
5:00 PM	0	0	31	0	31	64	2	44	0	110	1	0	0	0	1	0	0	0	0	142	110	32	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	0	140	0	140	216	6	145	0	367	5	0	0	0	5	0	1	0	0	1	513	368	145	0	0

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics		Page 11 of 13	
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

76th Street Location & North CFA DW



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	76th Street Location			North CFA DW			76th Street Location			Parking Lot				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
Start Time														
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementary School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Base Information, Observed (2) Hour and Estimated (24) Hour Volume Summaries

Major St: 76th Street
 Minor St: North CFA DW
 Intersection of: 76th Street & North CFA DW

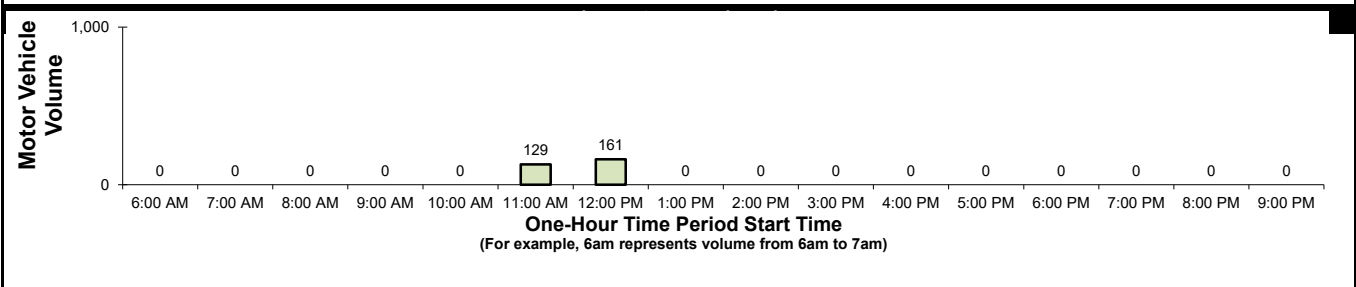
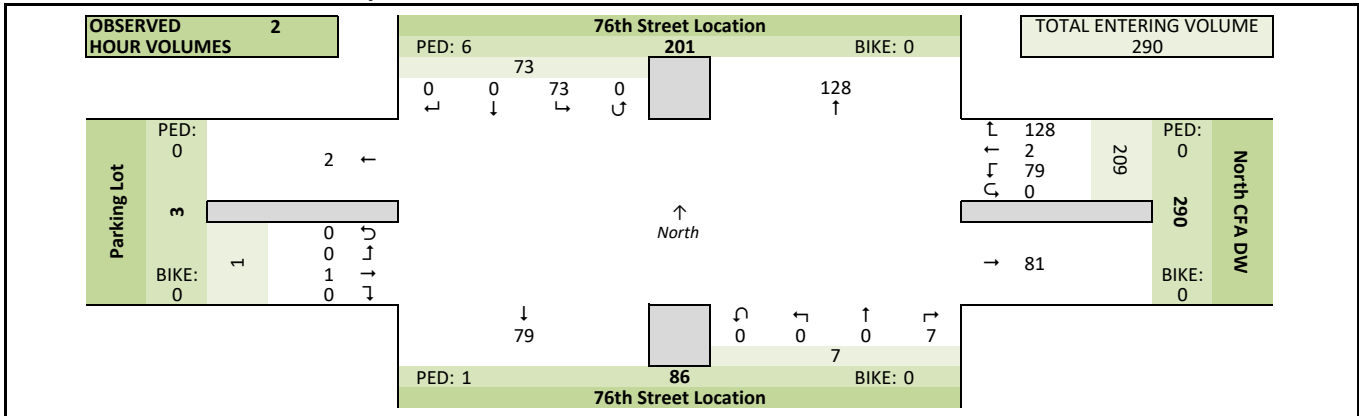
Site Information

Municipality	Village of Greendale
County	40 - Milwaukee
WisDOT Region	SE
Traffic Control	Uncontrolled
Roadway Names	North Direction ↑
North Leg	76th Street Location
East Leg	North CFA DW
South Leg	76th Street Location
West Leg	Parking Lot
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None None

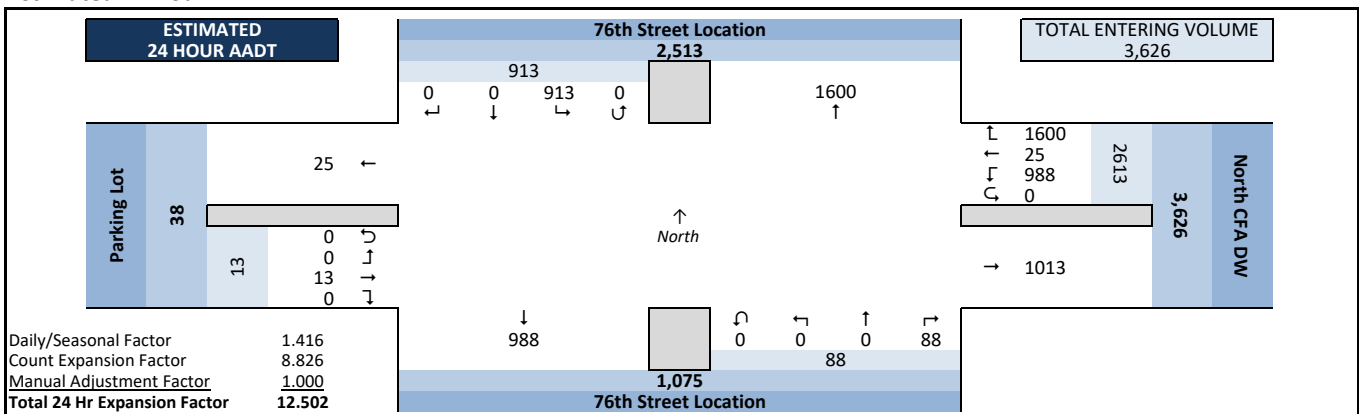
Count Information

Hrs Counted:	11:00 AM-01:00 PM		
1st Day of Count	Saturday, January 28, 2023	Weather	
AM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Midday Peak Period	Saturday, January 28, 2023	Clear & Dry	
PM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Calculated Peak Hours			
AM	MD	11:30-12:30am	PM
Peak Hours Selected for Analysis			
AM	MD	11:45-12:45pm	PM
Daily/Seasonal Adjustment Group (2) Urban Arterials & Collectors			
Count Expansion Group (2) Urban Arterials & Collectors			
Daily/Seasonal Adjustment Factor 1.416		Count Expansion Factor 8.826	
Company Name TADI, Inc		Manual Adj. 1.000	
Observers	AM Peak Period	None	
	Midday Peak Period	Jeff Schleif	
	PM Peak Period	None	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 2 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

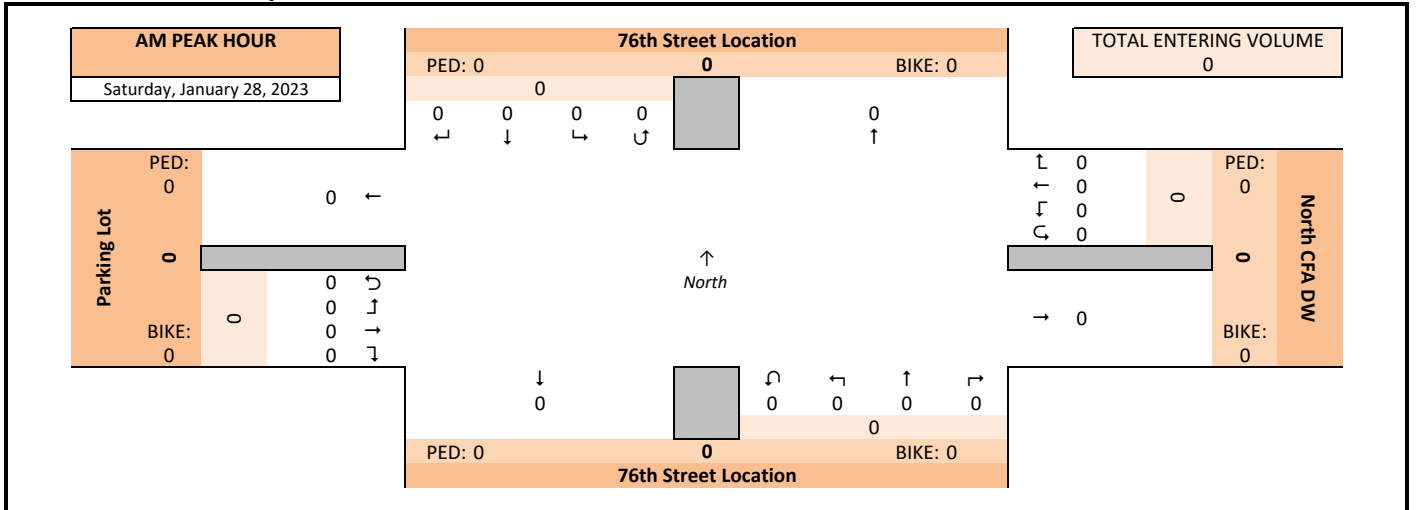
Count Basics		Page 2 of 13	
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

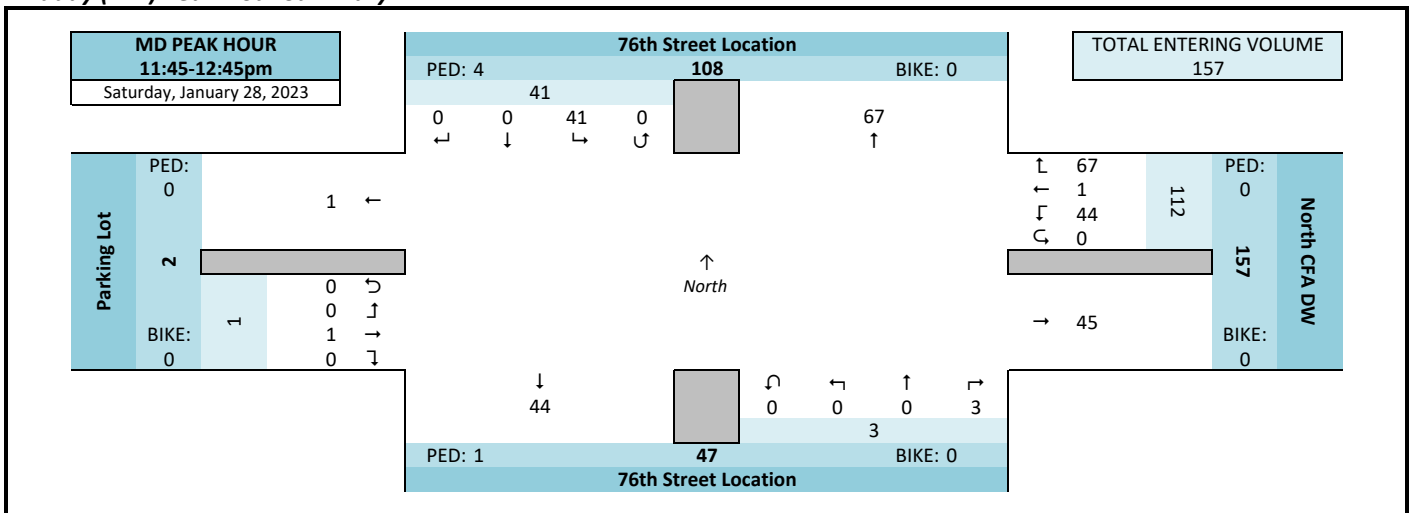
76th Street & North CFA DW



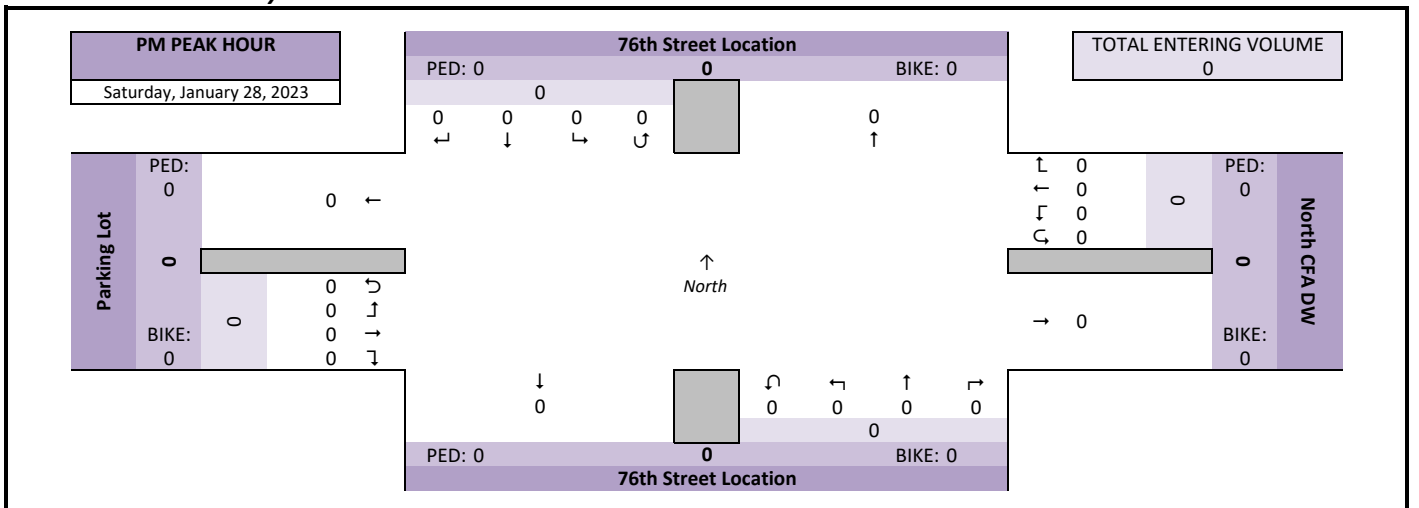
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

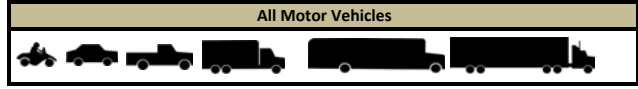


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

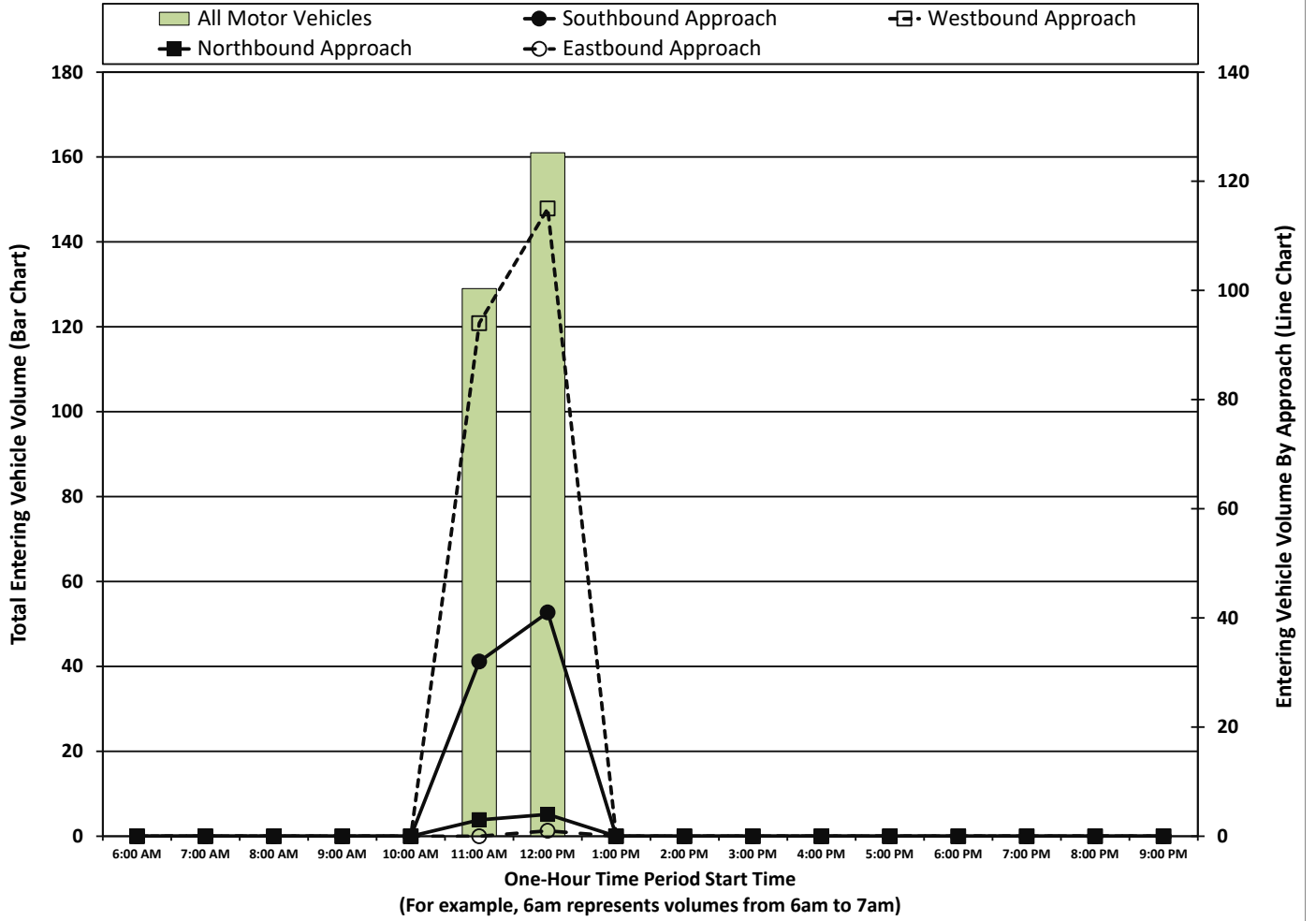
76th Street & North CFA DW



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	From North				From East				From South				From West				Total Vehicle	Directional Volume Totals				
	76th Street Location				North CFA DW				76th Street Location				Parking Lot					E/W	N/S			
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume						
AM																						
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
MD																						
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
11:00 AM	0	0	32	0	32	61	1	32	0	94	3	0	0	0	3	0	0	0				
12:00 PM	0	0	41	0	41	67	1	47	0	115	4	0	0	0	4	1	0	0				
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
PM																						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
Totals	0	0	73	0	73	128	2	79	0	209	7	0	0	0	7	0	1	0	1	290	210	80

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics			Page 11 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

15-Minute Pedestrian and Bicyclist Data

76th Street & North CFA DW



15-Minute Pedestrian and Bicyclist Data

15-Minute Time Period	Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			15-Min Totals	Hourly Sum
	76th Street Location			North CFA DW			76th Street Location			Parking Lot				
	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
11:15 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	7
11:30 AM	1	0	1	0	0	0	0	0	0	0	0	0	1	6
11:45 AM	2	0	2	0	0	0	0	0	0	0	0	0	2	5
12:00 PM	2	0	2	0	0	0	1	0	1	0	0	0	3	3
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	6	0	6	0	0	0	1	0	1	0	0	0	7	

Special Pedestrians

Pedestrian Type	None	1 or 2	A Few	Several	Many	Unknown
Pre-school Children	x					
Elementry School Age Children	x					
Visually Impaired (white cane/help)	x					
Elderly/Disabled (except wheelchair)	x					
Wheelchairs/Electric Scooters	x					
Other (None)	x					

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Base Information, Observed (4) Hour and Estimated (24) Hour Volume Summaries

Major St: 76th Street location
 Minor St: South CFA DW
 Intersection of: 76th Street location & South CFA DW

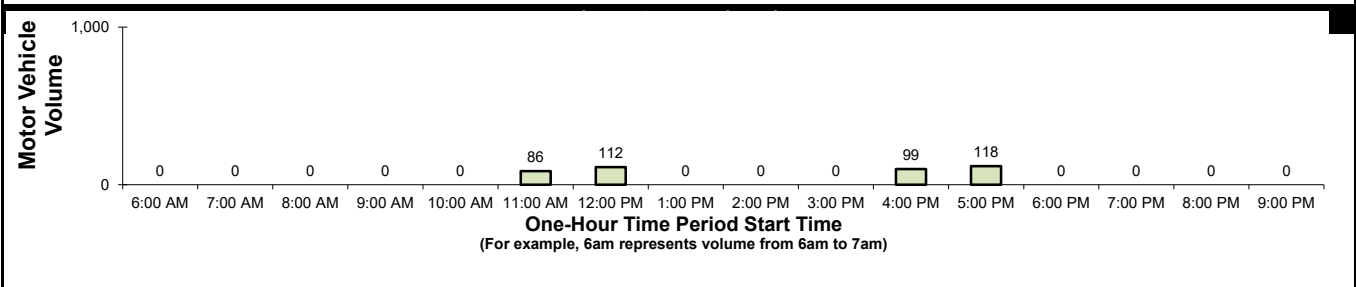
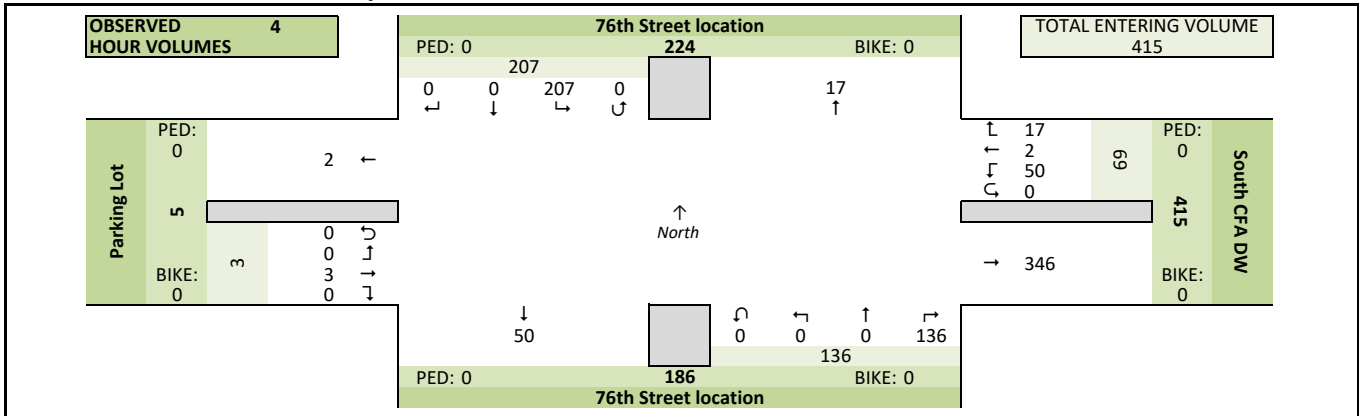
Site Information

Municipality	Village of Greendale
County	40 - Milwaukee
WisDOT Region	SE
Traffic Control	Uncontrolled
Roadway Names	North Direction ↑
North Leg	76th Street location
East Leg	South CFA DW
South Leg	76th Street location
West Leg	Parking Lot
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None None

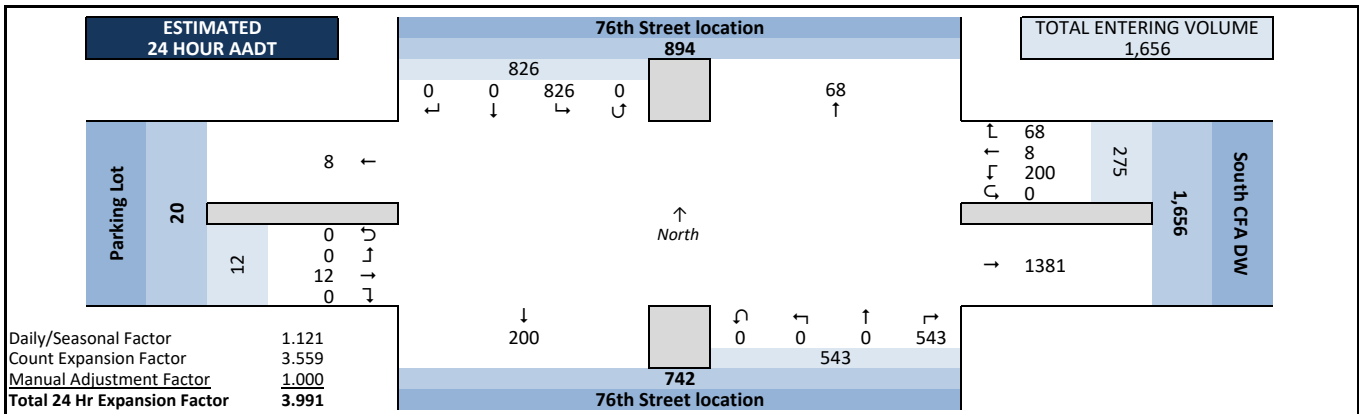
Count Information

Hrs Counted:	11:00 AM-01:00 PM and 04:00 PM-06:00 PM		
1st Day of Count	Wednesday, January 25, 2023	Weather	
AM Peak Period	Friday, January 27, 2023	Clear & Dry	
Midday Peak Period	Friday, January 27, 2023	Clear & Dry	
PM Peak Period	Wednesday, January 25, 2023	Clear & Dry	
Calculated Peak Hours			
AM	MD	11:30-12:30am	PM 4:45-5:45pm
Peak Hours Selected for Analysis			
AM	MD	12:00-1:00pm	PM 4:00-5:00pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.121	Count Expansion Factor	3.559
Company Name	TADI, Inc	Manual Adj.	1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Wendy Picard	
	PM Peak Period	Amy Scheuerlein	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 4 Hour Volume Summary



Estimated 24 Hour AADT

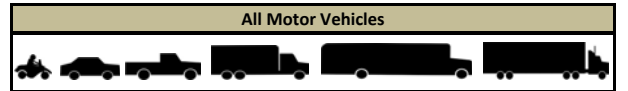


Intersection Traffic Volume Report

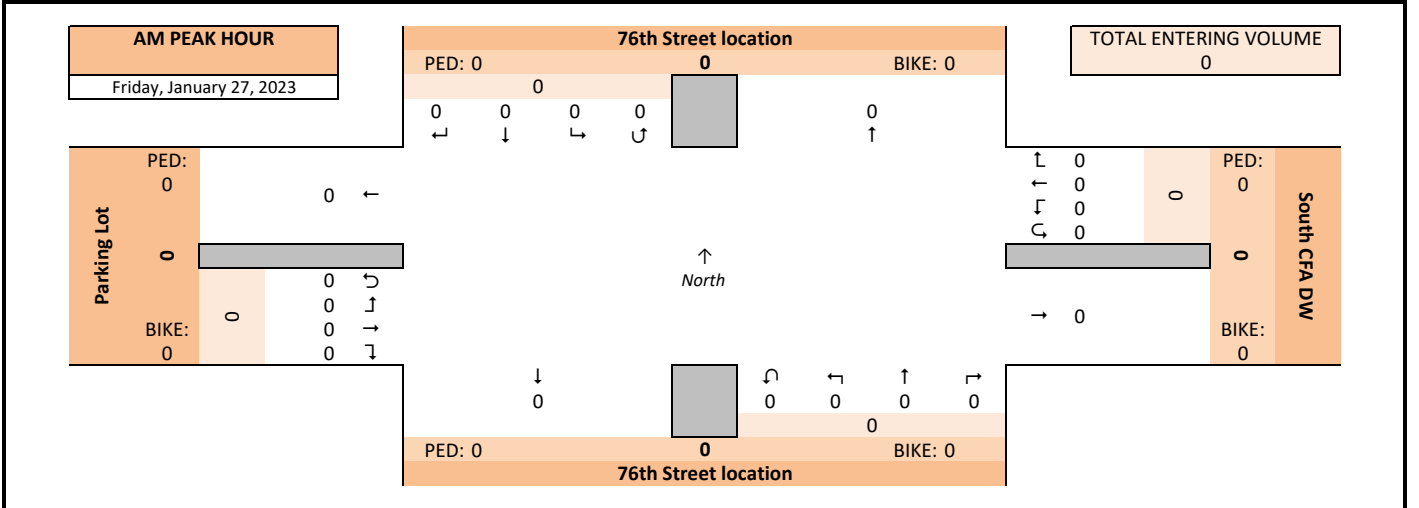
Count Basics		Page 2 of 13	
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

76th Street location & South CFA DW



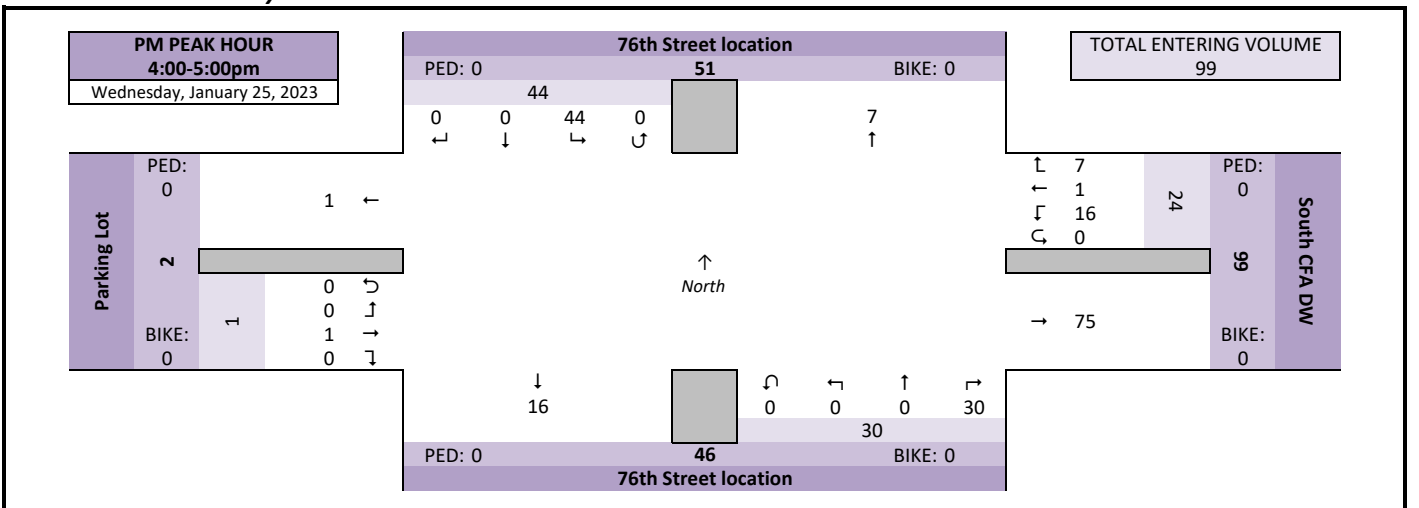
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

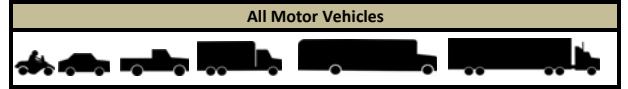


Intersection Traffic Volume Report

Count Basics Page 3 of 13
Start Date: Wednesday, January 25, 2023
Weekday
Schools in Session
Total Number of Hours Counted: 4
Non-Holiday
No Special Events

Peak Hour Volume Summary

76th Street location & South CFA DW



Peak Hour Volumes, Truck Percentages, and PHFs

Table for Friday, January 27, 2023. AM Peak Hour. Columns: From North (76th Street location), From East (South CFA DW), From South (76th Street location), From West (Parking Lot). Rows: Start Time (8:00-8:45 AM), Peak Hour Volume, Rounded Hourly Volume, % Single Unit Trucks, % Heavy Trucks, % Trucks (Total), Peak Hour Factor (PHF).

Table for Friday, January 27, 2023. Midday (MD) Peak Hour. Columns: From North (76th Street location), From East (South CFA DW), From South (76th Street location), From West (Parking Lot). Rows: Start Time (12:00-12:45 PM), Peak Hour Volume, Rounded Hourly Volume, % Single Unit Trucks, % Heavy Trucks, % Trucks (Total), Peak Hour Factor (PHF).

Table for Wednesday, January 25, 2023. PM Peak Hour. Columns: From North (76th Street location), From East (South CFA DW), From South (76th Street location), From West (Parking Lot). Rows: Start Time (4:00-4:45 PM), Peak Hour Volume, Rounded Hourly Volume, % Single Unit Trucks, % Heavy Trucks, % Trucks (Total), Peak Hour Factor (PHF).

Peak Hour Pedestrian and Bicyclist Volumes

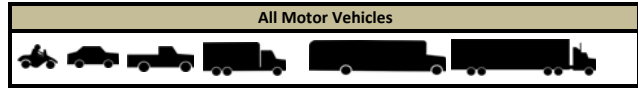
Table showing pedestrian and bicyclist volumes. Columns: Crossing (North Approach, East Approach, South Approach, West Approach) and Total Ped & Bike. Rows: 15-Minute Start Time (8:00-8:45 AM AM, 12:00-12:45 PM MD, 4:00-4:45 PM PM). Total Volume column on the far right.

Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

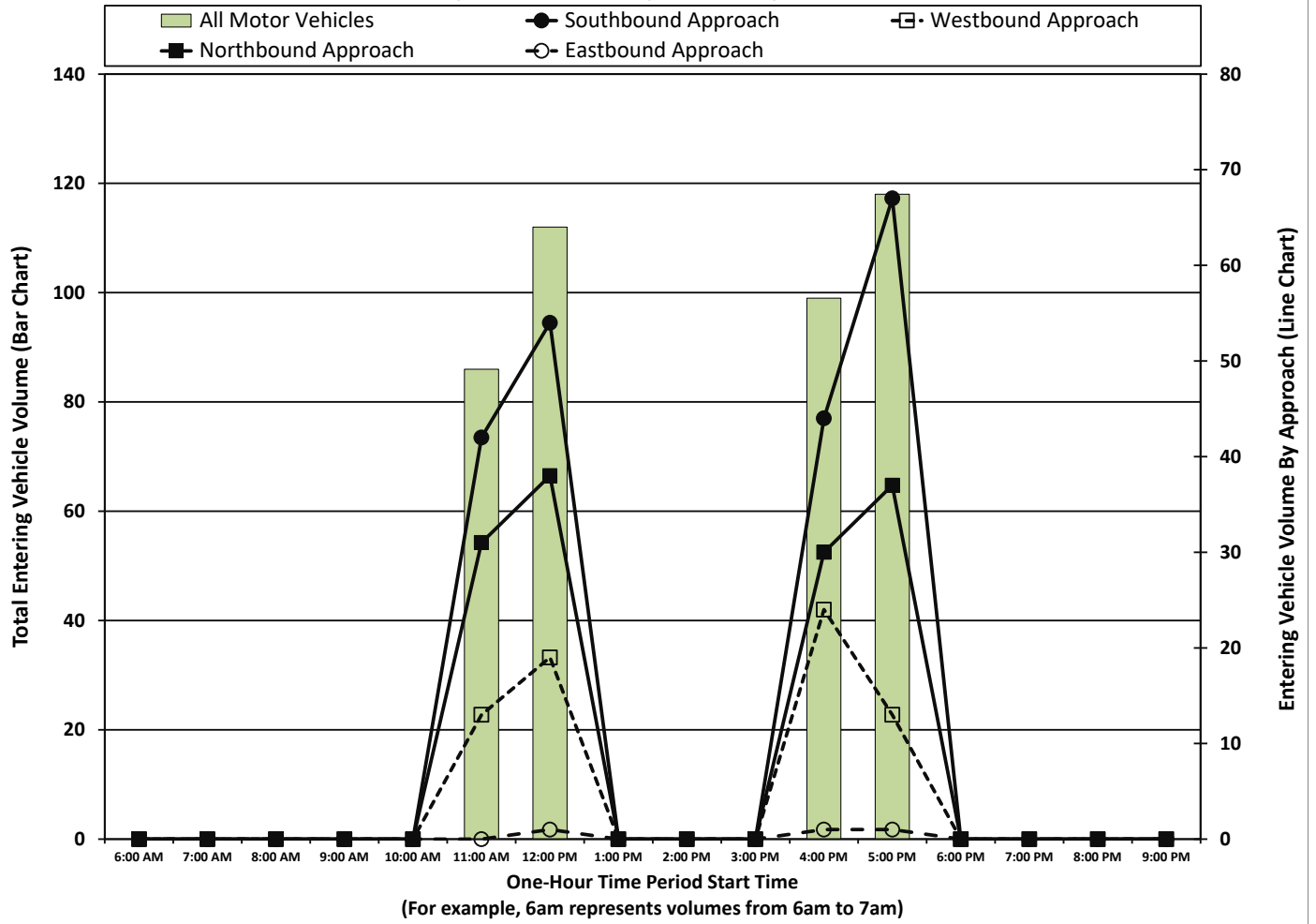
76th Street location & South CFA DW



One-Hour Motor Vehicle Data

One-Hour Time Period Start Time	From North 76th Street location				From East South CFA DW				From South 76th Street location				From West Parking Lot				Total Vehicle Volume	Directional Volume Totals				
	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn	Right	Thru	Left	U-Tn		Volume	E/W	N/S		
	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total	Total						
AM																						
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
MD																						
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
11:00 AM	0	0	42	0	42	2	0	11	0	13	31	0	0	0	31	0	0	0	86			
12:00 PM	0	0	54	0	54	5	0	14	0	19	38	0	0	0	38	0	1	0	112			
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
PM																						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
4:00 PM	0	0	44	0	44	7	1	16	0	24	30	0	0	0	30	0	1	0	99			
5:00 PM	0	0	67	0	67	3	1	9	0	13	37	0	0	0	37	0	1	0	118			
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Totals	0	0	207	0	207	17	2	50	0	69	136	0	0	0	136	0	3	0	3	415	72	343

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

Count Basics		Page 8 of 13	
Start Date:	Wednesday, January 25, 2023	Weekday	Schools in Session
Total Number of Hours Counted:	4	Non-Holiday	No Special Events

15-Minute Semi-Truck Data

76th Street location & South CFA DW



15-Minute Semi-Truck Data

15-Minute Time Period	From North					From East					From South					From West					15-Min Totals	Hourly Sum
	76th Street location					South CFA DW					76th Street location					Parking Lot						
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	[Grid of 0 counts for AM Peak Period: 6:00 AM to 9:45 AM]																					
Midday Peak Period	[Grid of 0 counts for Midday Peak Period: 10:00 AM to 1:45 PM]																					
PM Peak Period	[Grid of 0 counts for PM Peak Period: 2:00 PM to 9:45 PM]																					
Totals	0					0					0					0					0	0

Peak Hour Semi-Truck Volume Summary

Hourly Time Period	From North					From East					From South					From West					Total Hourly Volume
	76th Street location					South CFA DW					76th Street location					Parking Lot					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM 8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD 12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM 4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basis Page 13 of 13
Start Date: Wednesday, January 25, 2023
Weekday
Schools in Session
Total Number of Hours Counted: 4 Non-Holiday No Special Events

15-Minute Bicycle Turning Movement Count (Manual Entry)

76th Street location & South CFA DW



15-Minute Bicycle Data

15-Minute Bicycle Data table with columns for Time Period, Start Time, From North, From East, From South, From West, 15-Min Totals, Hourly Sum.

Peak Hour Bicycle Turning Movement Volume Summary

Peak Hour Bicycle Turning Movement Volume Summary table with columns for Hourly Time Period, From North, From East, From South, From West, Total Hourly Volume.

Intersection Traffic Volume Report

Count Basics		Version 2022.11.2	Page 1 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Base Information, Observed (2) Hour and Estimated (24) Hour Volume Summaries

Major St: 76th Street location
 Minor St: South CFA DW
 Intersection of: 76th Street location & South CFA DW

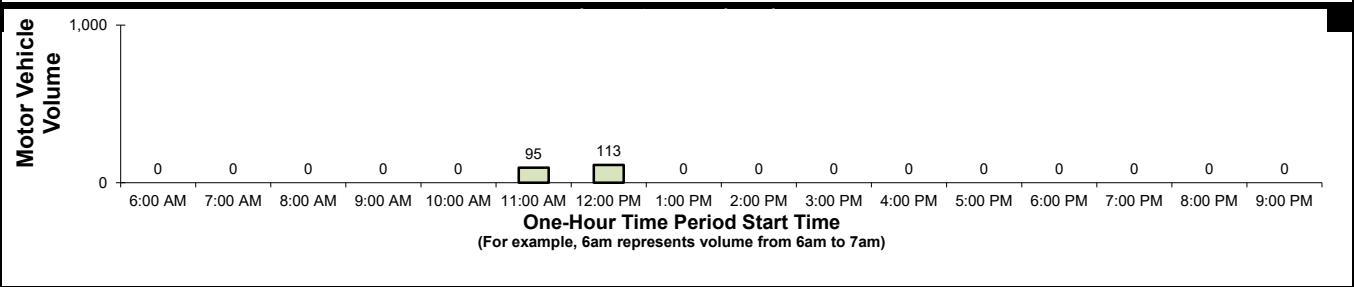
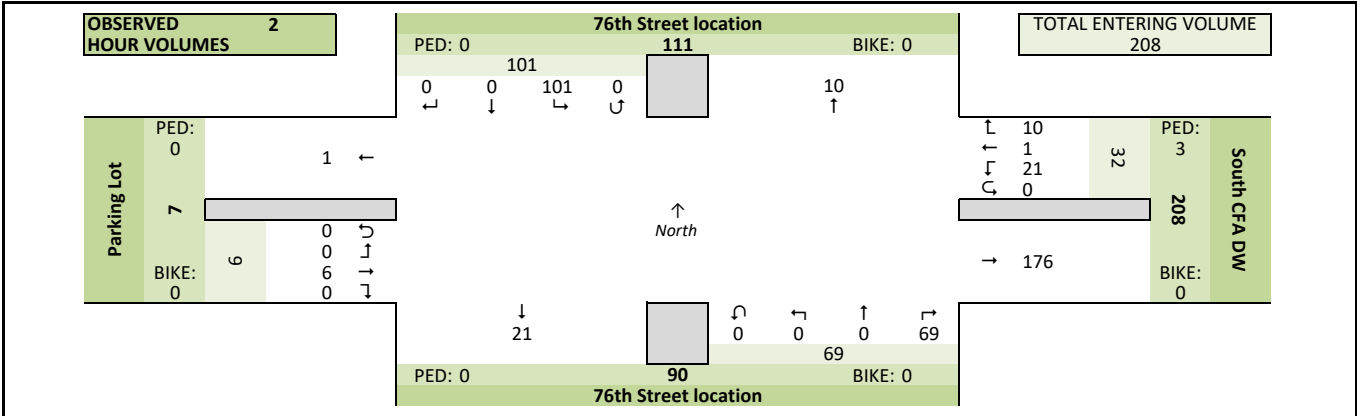
Site Information

Municipality	Village of Greendale
County	40 - Milwaukee
WisDOT Region	SE
Traffic Control	Uncontrolled
Roadway Names	North Direction ↑
North Leg	76th Street location
East Leg	South CFA DW
South Leg	76th Street location
West Leg	Parking Lot
Special Considerations	
Schools	In Session
Holidays	None
Special Events	None
Special Pedestrians Observed	
Pre-school children	None
Elementary school age children	None
Visually impaired (white cane/helper dog)	None
Elderly/disabled (except wheelchairs)	None
Wheelchairs/electric scooters	None
Other (describe)	None None

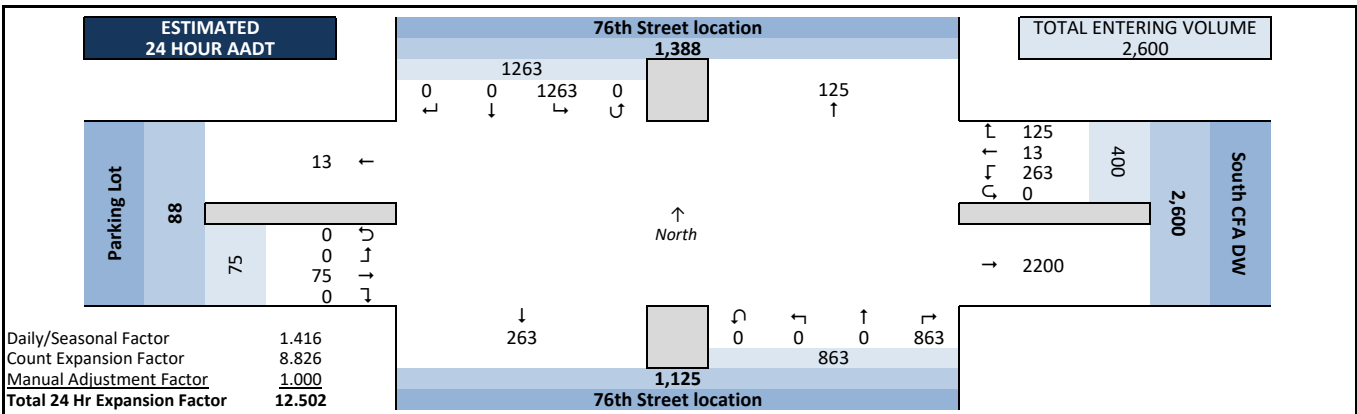
Count Information

Hrs Counted:	11:00 AM-01:00 PM		
1st Day of Count	Saturday, January 28, 2023	Weather	
AM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Midday Peak Period	Saturday, January 28, 2023	Clear & Dry	
PM Peak Period	Saturday, January 28, 2023	Clear & Dry	
Calculated Peak Hours			
	AM	MD 12:00-1:00pm	PM
Peak Hours Selected for Analysis			
	AM	MD 11:45-12:45pm	PM
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors		
Count Expansion Group	(2) Urban Arterials & Collectors		
Daily/Seasonal Adjustment Factor	1.416	Count Expansion Factor	8.826
Company Name	TADI, Inc	Manual Adj.	1.000
Observers	AM Peak Period	None	
	Midday Peak Period	Dani Ruffalo	
	PM Peak Period	None	
Comments	2021 DOT Daily & Seasonal Factors		

Observed 2 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

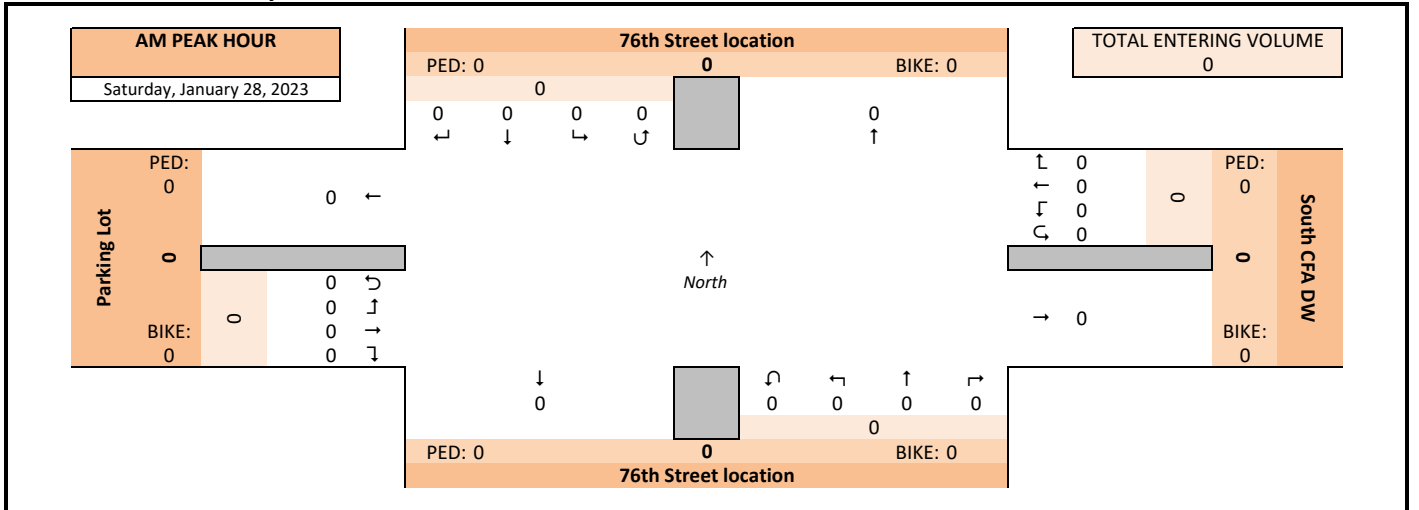
Count Basics		Page 2 of 13	
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

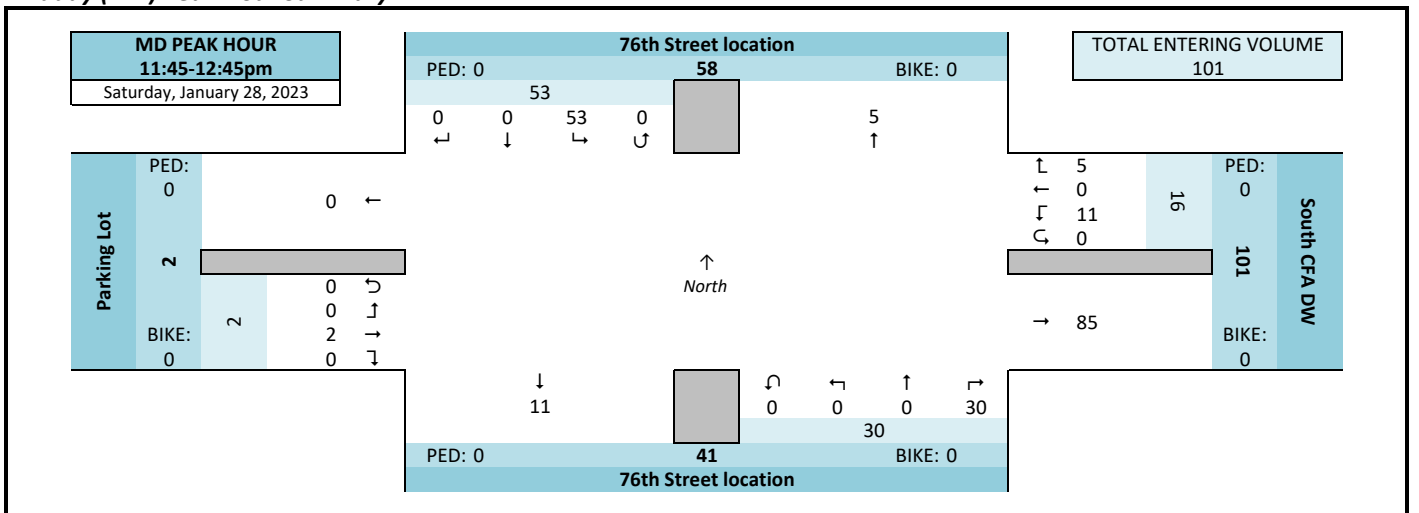
76th Street location & South CFA DW



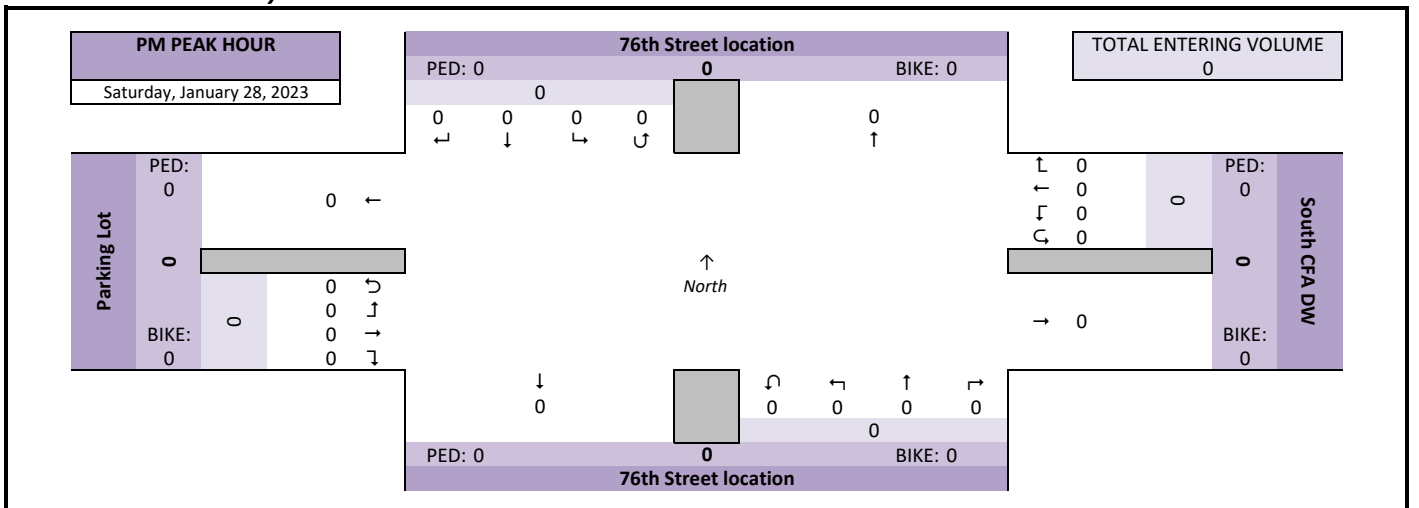
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary

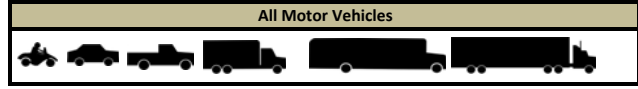


Intersection Traffic Volume Report

Count Basics			Page 4 of 13
Start Date:	Saturday, January 28, 2023	Weekend	Schools in Session
Total Number of Hours Counted:	2	Non-Holiday	No Special Events

Hourly Volume Summary - Motor Vehicle Data

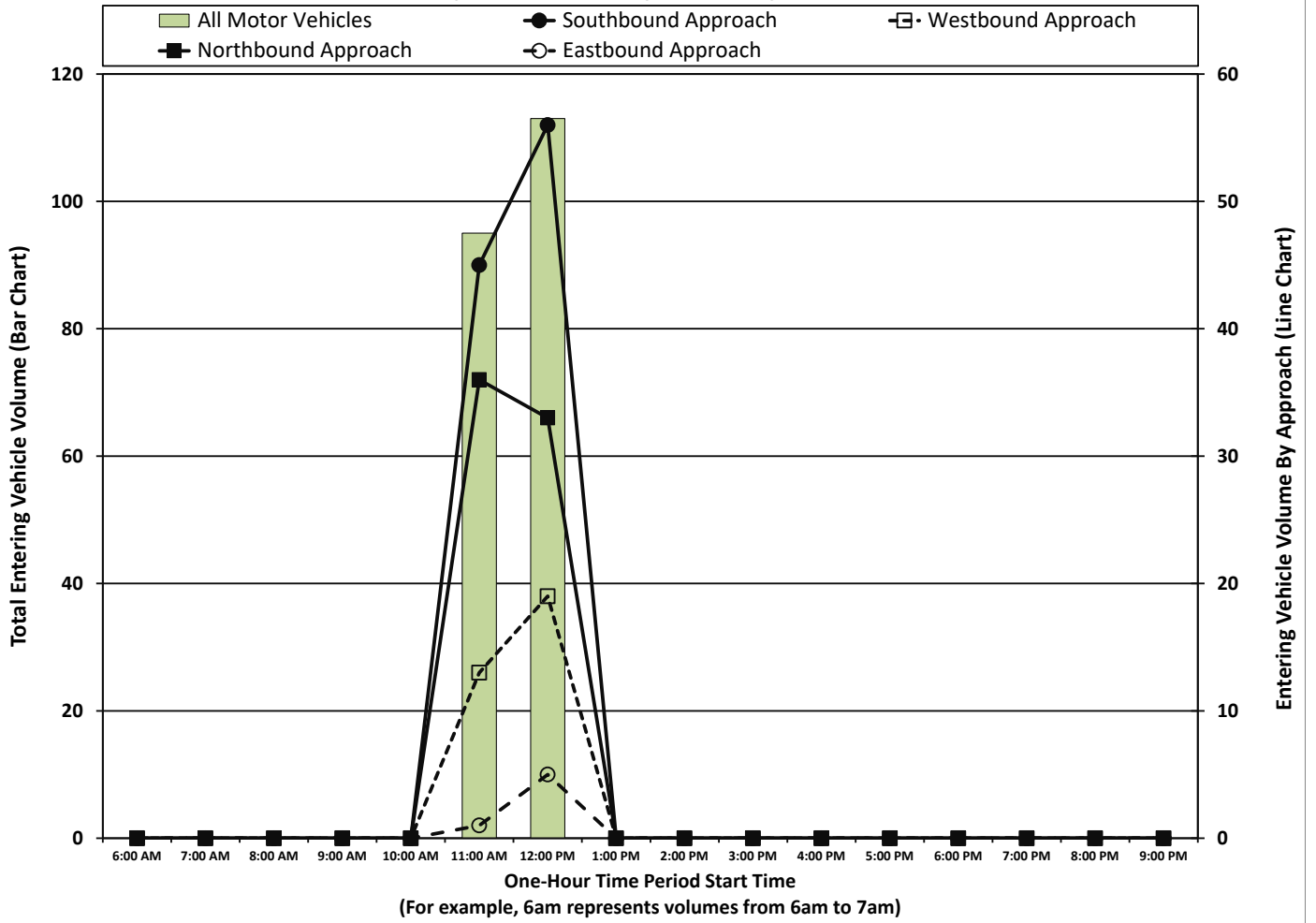
76th Street location & South CFA DW



One-Hour Motor Vehicle Data

One-Hour Time Period	From North 76th Street location				From East South CFA DW				From South 76th Street location				From West Parking Lot				Total Vehicle Volume	Directional Volume Totals					
	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right		Thru	Left	U-Tn	Total	E/W	N/S
AM																							
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MD																							
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	45	0	45	6	1	6	0	13	36	0	0	36	0	1	0	0	1	95	14	81	
12:00 PM	0	0	56	0	56	4	0	15	0	19	33	0	0	33	0	5	0	0	5	113	24	89	
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM																							
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals	0	0	101	0	101	10	1	21	0	32	69	0	0	69	0	6	0	0	6	208	38	170	

Graphical Summary of Hourly Volumes



Intersection Traffic Volume Report

15-Minute Bicycle Turning Movement Count (Manual Entry)

76th Street location & South CFA DW



15-Minute Bicycle Data

Main data table with columns for 15-Minute Time Period, From North, From East, From South, From West, 15-Min Totals, and Hourly Sum. Rows are categorized by time period: Pre-AM Peak Period, AM Peak Period, Midday Peak Period, PM Peak Period, and Post-PM Peak Period.

Peak Hour Bicycle Turning Movement Volume Summary

Summary table with columns for Hourly Time Period, From North, From East, From South, From West, Total Hourly Volume. Rows for AM 8:00 AM, MD 11:45 AM, PM 4:00 PM.

Brookfield Queue Counts

File Name: C:\Users\Inge\Counts\2296 Glendale\Original Counts\Brookfield Capitol Dr. Chick-Fil-A Ins-Outs, PM.ppd
 Start Date: 1/8/2019
 Start Time: 4:00:00 PM
 Site Code: 00000000
 Comment 1: Brookfield
 Comment 2: Weekday PM
 Comment 3: #5009
 Comment 4: RA.

Start Time	CHICK A FILA DRIVES From North			BOOKFIELD EW DRIVE From East			CHICK A FILA DRIVES From South			BOOKFIELD EW DRIVE From West			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Peds
04:00 PM	0	0	23	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	31	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	28	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	31	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	35	0	0	0	0	1	0	0	0	0	0
05:15 PM	0	0	45	0	0	0	0	0	1	0	0	0	0
05:30 PM	0	0	40	0	0	0	4	0	0	0	0	0	0
05:45 PM	0	0	46	0	0	0	1	2	1	0	0	0	0
	4	3	2	1	8	7	6	5	10	11	10	15	14
								ignore	IN	OUT	IN		
													13

Start Time	IN	OUT
04:00 PM	30	24
04:15 PM	32	31
04:30 PM	39	28
04:45 PM	37	31
05:00 PM	49	35
05:15 PM	43	46
05:30 PM	50	40
05:45 PM	55	47

File Name: C:\Users\Inge\Counts\2296 Glendale\Brookfield Square Chick-Fil-A Ins-Outs, PM.ppd

Start Date: 1/9/2019

Start Time: 4:00:00 PM

Site Code: 00000000

Comment 1: Brookfield Square

Comment 2: Weekday PM

Comment 3: #4755

Comment 4: TA.

Start Time	CHICK FIL A BKFLD SQ From North			IN From East			CHICK FIL A BKFLD SQ From South			OUT From West		
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds
04:00 PM	0	0	0	0	0	21	0	0	0	0	21	0
04:15 PM	0	0	0	0	0	15	0	0	0	0	17	0
04:30 PM	0	0	0	0	0	21	0	0	0	0	22	0
04:45 PM	0	0	0	0	0	26	0	0	0	0	20	0
05:00 PM	0	0	0	0	0	27	0	0	0	0	25	0
05:15 PM	0	0	0	0	0	29	0	0	0	0	28	0
05:30 PM	0	0	0	0	0	33	0	0	0	0	28	0
05:45 PM	0	0	0	0	0	38	0	0	0	0	31	0

File Name: C:\Users\Inge\Counts\2296 Glendale\Brookfield Square Chick-Fil-A Ins-Outs, Sat.ppd

Start Date: 1/5/2019

Start Time: 11:00:00 AM

Site Code: 00000000

Comment 1: Brookfield

Comment 2: Saturday Midday

Comment 3: #4755

Comment 4: TA.

Start Time	CHICK FIL A BKFLD SQ From North			IN From East			CHICK FIL A BKFLD SQ From South			OUT From West					
	Left	Thru	Right	Peds	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Peds	
11:00 AM	0	0	0	0	0	24	0	0	0	0	0	0	19	0	0
11:15 AM	0	0	0	0	0	28	0	0	0	0	0	0	15	0	0
11:30 AM	0	0	0	0	0	37	0	0	0	0	0	0	22	0	0
11:45 AM	0	0	0	0	0	51	0	0	0	0	0	0	36	0	0
12:00 PM	0	0	0	0	0	52	0	0	0	0	0	0	41	0	0
12:15 PM	0	0	0	0	0	56	0	0	0	0	0	0	52	0	0
12:30 PM	0	0	0	0	0	34	0	0	0	0	0	0	48	0	0
12:45 PM	0	0	0	0	0	56	0	0	0	0	0	0	55	0	0

Chick-fil-a Brookfield Square
1/9/2019

Total Cars Queued in Drive Through each Minute

Time	Lane 1	Lane 2	Total	Time	Lane 1	Lane 2	Total	Time	Lane 1	Lane 2	Total
4:00	1	1	2	4:40	0	0	0	5:20	0	0	0
1	0	1	1	41	1	1	2	21	1	1	2
2	0	0	0	42	0	1	1	22	1	1	2
3	0	0	0	43	2	1	3	23	0	0	0
4	0	0	0	44	2	2	4	24	1	0	1
5	1	1	2	45	1	1	2	25	0	0	0
6	0	0	0	46	1	1	2	26	0	0	0
7	0	0	0	47	0	1	1	27	0	0	0
8	0	0	0	48	0	2	2	28	1	1	2
9	1	0	1	49	2	2	4	29	1	1	2
4:10	0	0	0	4:50	1	1	2	5:30	0	0	0
11	1	0	1	51	0	1	1	31	0	0	0
12	1	0	1	52	1	1	2	32	0	0	0
13	1	1	2	53	0	0	0	33	1	1	2
14	1	0	1	54	0	0	0	34	2	1	3
15	1	0	1	55	1	0	1	35	1	0	1
16	0	0	0	56	1	1	2	36	0	1	1
17	0	0	0	57	0	0	0	37	2	2	4
18	0	0	0	58	1	1	2	38	3	1	4
19	1	0	1	59	0	0	0	39	1	1	2
4:20	0	1	1	5:00	0	1	1	5:40	2	2	4
21	0	1	1	1	0	0	0	41	2	3	5
22	0	0	0	2	1	0	1	42	2	1	3
23	1	1	2	3	0	0	0	43	3	2	5
24	1	1	2	4	1	0	1	44	1	2	3
25	0	1	1	5	1	1	2	45	2	1	3
26	0	0	0	6	1	1	2	46	1	0	1
27	0	1	1	7	2	1	3	47	1	0	1
28	0	1	1	8	1	0	1	48	0	1	1
29	0	0	0	9	0	0	0	49	1	0	1
4:30	1	0	1	5:10	0	0	0	5:50	1	1	2
31	1	0	1	11	1	0	1	51	0	0	0
32	0	0	0	12	1	0	1	52	0	0	0
33	0	0	0	13	0	0	0	53	2	2	4
34	0	1	1	14	1	0	1	54	3	2	5
35	1	0	1	15	1	1	2	55	2	2	4
36	0	0	0	16	0	0	0	56	1	1	2
37	0	0	0	17	1	1	2	57	0	0	0
38	1	1	2	18	1	0	1	58	0	0	0
39	0	0	0	19	1	0	1	59	1	0	1

Queue Summary	
All Data	
Minimum	0
Maximum	5
Average	1

Queue Summary	
Peak Hour	
5:00-6:00 p.m.	
Minimum	0
Maximum	5
Average	2

*Pk hr of Chick-Fil-A in
Brookfield Square*

Chick-fil-a Brookfield Square
1/5/2019

Total Cars Queued in Drive Through each Minute

Time	Total	Time	Total	Time	Total
11:00	0	11:40	0	12:20	4
1	0	41	0	21	5
2	0	42	0	22	5
3	0	43	0	23	5
4	1	44	0	24	3
5	1	45	0	25	0
6	0	46	0	26	1
7	0	47	1	27	2
8	0	48	0	28	1
9	0	49	0	29	2
11:10	0	11:50	2	12:30	2
11	0	51	2	31	1
12	0	52	1	32	2
13	0	53	0	33	2
14	0	54	0	34	1
15	0	55	0	35	0
16	0	56	0	36	0
17	0	57	0	37	0
18	0	58	0	38	0
19	0	59	0	39	0
11:20	0	12:00	0	12:40	0
21	0	1	0	41	0
22	0	2	0	42	2
23	0	3	2	43	3
24	0	4	0	44	1
25	0	5	1	45	1
26	1	6	0	46	1
27	0	7	0	47	0
28	1	8	5	48	2
29	0	9	5	49	2
11:30	0	12:10	4	12:50	4
31	0	11	4	51	3
32	0	12	2	52	4
33	0	13	2	53	2
34	0	14	1	54	2
35	0	15	1	55	6
36	0	16	1	56	6
37	0	17	0	57	5
38	0	18	4	58	3
39	0	19	6	59	5

Queue Summary	
All Data	
Minimum	0
Maximum	6
Average	1

Queue Summary	
Peak Hour	
12:00-1:00 p.m.	
Minimum	0
Maximum	6
Average	2

*Pk hr of Chick-Fil-A in
Brookfield Square*

Chick-fil-a Brookfield at 128th/Capitol Drive
1/9/2019

Total Cars Queued in Drive Through each Minute

Time	Lane 1	Lane 2	Total	Time	Lane 1	Lane 2	Total	Time	Lane 1	Lane 2	Total
4:00	3	3	6	4:40	3	3	6	5:20	3	2	5
1	3	3	6	41	3	2	5	21	2	2	4
2	2	2	4	42	4	3	7	22	3	3	6
3	2	1	3	43	3	3	6	23	4	3	7
4	3	1	4	44	5	4	9	24	3	2	5
5	2	1	3	45	4	5	9	25	2	3	5
6	2	2	4	46	4	4	8	26	1	1	2
7	2	2	4	47	4	3	7	27	1	1	2
8	3	2	5	48	3	3	6	28	0	0	0
9	3	2	5	49	3	3	6	29	1	1	2
4:10	4	3	7	4:50	2	3	5	5:30	1	2	3
11	4	3	7	51	3	4	7	31	3	3	6
12	4	2	6	52	3	3	6	32	6	5	11
13	3	1	4	53	2	2	4	33	5	6	11
14	2	1	3	54	3	1	4	34	5	5	10
15	2	1	3	55	3	1	4	35	6	6	12
16	1	1	2	56	2	2	4	36	5	6	11
17	1	1	2	57	1	1	2	37	5	6	11
18	1	2	3	58	2	2	4	38	6	6	12
19	1	2	3	59	1	1	2	39	5	5	10
4:20	2	1	3	5:00	0	1	1	5:40	5	5	10
21	2	2	4	1	1	1	2	41	4	6	10
22	1	1	2	2	2	1	3	42	5	6	11
23	2	1	3	3	3	2	5	43	4	5	9
24	1	2	3	4	1	2	3	44	4	6	10
25	1	1	2	5	2	2	4	45	5	6	11
26	2	2	4	6	1	3	4	46	4	5	9
27	1	1	2	7	1	1	2	47	4	4	8
28	1	0	1	8	1	1	2	48	5	5	10
29	0	1	1	9	1	0	1	49	6	6	12
4:30	1	1	2	5:10	1	2	3	5:50	5	5	10
31	2	1	3	11	1	2	3	51	4	5	9
32	3	2	5	12	3	2	5	52	6	6	12
33	3	3	6	13	3	1	4	53	6	6	12
34	5	5	10	14	1	1	2	54	6	7	13
35	4	4	8	15	1	1	2	55	6	7	13
36	4	5	9	16	2	2	4	56	7	7	14
37	4	4	8	17	1	2	3	57	8	7	15
38	3	4	7	18	1	2	3	58	7	8	15
39	3	4	7	19	1	1	2	59	8	8	16

Queue Summary	
All Data	
Minimum	0
Maximum	16
Average	6

Queue Summary	
Peak Hour	
5:00-6:00 p.m.	
Minimum	0
Maximum	16
Average	7

Peak hr of Chick-Fil-A in
Brookfield Square

*At 6:01, field staff noted that the drive-through lane queue exceeded storage space and the queue was extending into the parking lot.

Chick-fil-a Brookfield at 128th/Capitol Drive
1/5/2019

Total Cars Queued in Drive Through each Minute

Time	Total	Time	Total	Time	Total
11:00	4	11:40	8	12:20	8
1	4	41	9	21	8
2	3	42	9	22	6
3	1	43	8	23	7
4	1	44	10	24	7
5	1	45	10	25	7
6	1	46	10	26	9
7	1	47	10	27	10
8	1	48	7	28	14
9	1	49	10	29	14
11:10	1	11:50	8	12:30	18
11	1	51	10	31	17
12	0	52	10	32	14
13	0	53	11	33	10
14	3	54	11	34	8
15	5	55	8	35	12
16	5	56	10	36	15
17	3	57	9	37	17
18	2	58	8	38	17
19	1	59	7	39	15
11:20	2	12:00	7	12:40	13
21	3	1	7	41	10
22	2	2	5	42	10
23	2	3	5	43	8
24	3	4	4	44	10
25	0	5	10	45	9
26	1	6	12	46	11
27	1	7	11	47	12
28	1	8	12	48	12
29	3	9	14	49	12
11:30	6	12:10	12	12:50	9
31	3	11	13	51	9
32	4	12	12	52	7
33	6	13	9	53	7
34	7	14	8	54	5
35	7	15	8	55	4
36	8	16	7	56	4
37	8	17	9	57	5
38	6	18	10	58	6
39	7	19	9	59	11

Queue Summary	
All Data	
Minimum	0
Maximum	18
Average	7

Queue Summary	
Peak Hour	
12:00-1:00 p.m.	
Minimum	4
Maximum	18
Average	10

*Pk hr of Chick-Fil-A on
Capitol Dr.*

Saturation Flow Rate Calculations

Date: February 8, 2023

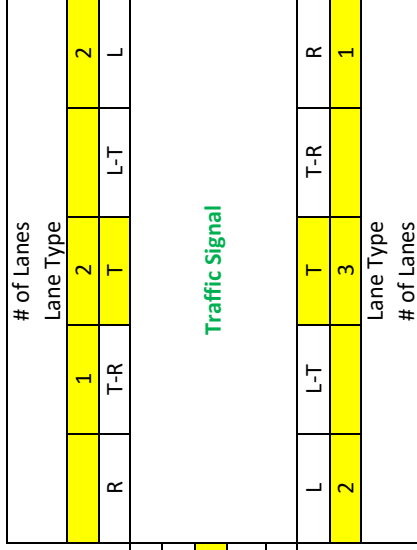
Intersection Name
Morgan at 27th Street

Urbanized Area/Cluster Population
1,376,476

BASE SATURATION FLOW RATE CALCULATIONS

Exit Ramp: No
Speed Limit: 35

Sat. Flow Rate (pc/h/ln)
1903 1903 1903



Exit Ramp: No
Speed Limit: 30

Sat. Flow (pc/h/ln)
1853
1853
1900

Exit Ramp: No
Speed Limit: 30

Sat. Flow (pc/h/ln)
1853
1853
1853

*Consider using
1900 pc/h/ln

*Consider using
1900 pc/h/ln



Bureau of Traffic Operations
Last Updated: 4/7/2022

Sat. Flow Rate (pc/h/ln)
1912 1912 1900

Speed Limit: 35
Exit Ramp: No

Date: February 8, 2023

Intersection Name
Loomis at 27th Street

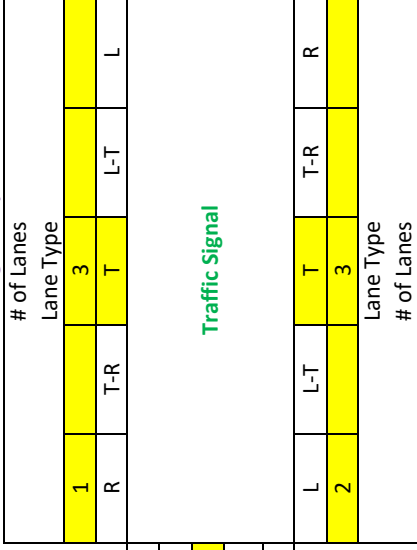
Urbanized Area/Cluster Population
1,376,476

BASE SATURATION FLOW RATE CALCULATIONS

Exit Ramp:	No
Speed Limit:	35

Sat. Flow Rate (pc/h/ln)	1891
--------------------------	------

*Consider using 1900 pc/h/ln



Exit Ramp:	No
Speed Limit:	35

Sat. Flow (pc/h/ln)	1871
	1900

*Consider using 1900 pc/h/ln

Exit Ramp:	
Speed Limit:	

Sat. Flow (pc/h/ln)	

Lane Type	R	T-R	T	L-T	L
# of Lanes					



Bureau of Traffic Operations
Last Updated: 4/7/2022

Sat. Flow Rate (pc/h/ln)	1903
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Speed Limit:	35
Exit Ramp:	No

Date: February 8, 2023

Intersection Name
Morgan at Lakeland Drive

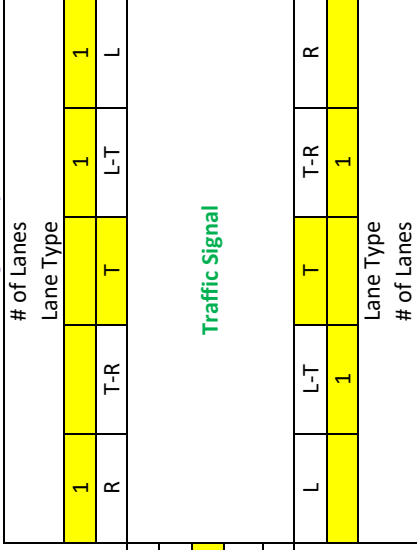
Urbanized Area/Cluster Population
1,376,476

BASE SATURATION FLOW RATE CALCULATIONS

Exit Ramp: No
Speed Limit: 25

Sat. Flow Rate (pc/h/ln)
1900 1900 1797 *

*Consider using 1900 pc/h/ln



Exit Ramp:	No
Speed Limit:	30
Sat. Flow (pc/h/ln)	1853
Sat. Flow (pc/h/ln)	1853
Sat. Flow (pc/h/ln)	1900

*Consider using 1900 pc/h/ln

Exit Ramp:	No
Speed Limit:	30
Sat. Flow (pc/h/ln)	1853
Sat. Flow (pc/h/ln)	1853

*Consider using 1900 pc/h/ln



Bureau of Traffic Operations
Last Updated: 4/7/2022

Speed Limit: 25
Exit Ramp: No

Sat. Flow Rate (pc/h/ln)
1900 1760

*Consider using 1900 pc/h/ln

Existing Signal Timings

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: _____

Date: 2/16/15

Signal No: 9046

Controller / Cabinet: ASC3 RACK MOUNT, SOFTWARE VERSION 2.51, #332 CABINET

Service: 3 #4/1 #8 LTP SERV. FED FROM T-7-S TRANCLOSURE 120/240V

Master: WISDOT T.O.C.

Auxiliary Equipment: 50A C.B. FEEDS SERV. TO MORGAN & 27TH 1 1/4" VENT PIPE ENCOM ANTENNA / MODEM

Flash Program: 2400-0530 HRS.; N/S-RED, E/W-YELLOW (EX. SAT. 2400-0700 HRS. AND SUN. 2400-0900 HRS.)

Program Notes: DAY PLAN1: WEEKEND(SUN), DAY PLAN2: WEEKDAY(MON-FRI), DAY PLAN3: WEEKEND(SAT)

ACTION PLAN 1: OFFPEAK, ACTION PLAN 4: 1500-1800, ACTION PLAN 7: 0600-0900

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NB RAMP	SB/ WXW	EBLT	WB/ NXW	-	NB	WBLT	EB/ SXW								
Overlap	A	B	C	D	E	F	G	H	I	J	L	K	L	M	N	O
Description																

Controller Sequence (MM)1-1-1

All Sequences (1-16)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ring 1	2	1	3	4	9	10	13	14								
Ring 2	5	6	7	8	11	12	15	16								

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X		X		X		X								
Exclusive PED						x										

Load Switch Assignments (MMU Channel) (MM)1-3

Switch	Phase/ Overlap	Type	Dimming				Flash		
			Red	Yellow	Green	Dark	Power	Auto	Together
1	1	V				+	R	R	X
2	2	V				+	R	R	X
3	3	V				+	R	R	
4	4	V				+	R	Y	
5	5	V				-	R	R	X
6	6	V				-	R	R	X
7	7	V				-	R	R	
8	8	V				-	R	Y	
9	2	P				+			X
10	4	P				+			
11	6	P				-			X
12	8	P				-			
13	1	O				+	R	R	X
14	2	O				-	R	R	X
15	3	O				+	R	R	
16	4	O				-	R	R	

Ethernet (MM)1-5-1

Controller IP: 10.17.91.25
 Subnet Mask: 255.255.0.0
 Default Gateway IP: 10.17.0.1
 Server IP: 10.17.91.35
 Link Speed/Duplex: Auto
 Drop-out Time: 10

SDLC Port 1 Config (MM)1-4-1

Term & Facility:
 Detector Rack: "
 Enable TS2/MMU Type Cab: No
 Enable MMU Extended Status: No
 Enable SDLC Stop Time: No
 Enable 3 Crit. RFEs Lockup: Yes
 MMU to CU SDLC Ext. Start: Enabled

ECPIP (MM)1-5-6

Controller Address: 4

Designed By: SCR

Checked By: _____

Approved By: _____

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: 0

Controller Timing Plan (MM)2-1

All Timing Plans (1-4)

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	10	10	7	12			7	12								
BK Min Green																
CS Min Green																
Delay Green																
Walk				7		7		7								
Walk 2																
Walk Max																
Ped Clear				11		16		11								
Ped Clear 2																
Ped Clear Max																
Ped CO																
Vehicle Ext	3	4	3				3									
Vehicle Ext 2																
Max 1	13	14	10	70			10	70								
Max 2	13	20	10	70			10	70								
Max 3																
DYM Max																
DYM Stp																
Yellow	3.5	3.5	3.5	4		3.5	3.5	4								
Red Clear	3	3		2		3		2								
Red Max																
Red Revert	3	3		2		3		2	2	2	2	2	2	2	2	2
ACT B4																
SEC/ACT		2														
Max Int		20														
Time B4																
Cars Wt																
STPT Duc																
Time To Reduce																
Min Gap																

Vehicle Overlaps (MM)2-2

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Vehicle/Pedestrian Overlaps (MM)2-3

Included	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Guaranteed Minimum Time Data (MM)2-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Walk																
Ped Clear	6	6	6	6	6	16	6	6	6	6	6	6	6	6	6	6
Yellow	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Red Clr																
OVL Green	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: 0

Controller Start/Flash (MM) 2-5

Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase				W				W								
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P

Flash > Mon: No

Flash Time: 10

All Red: 6

Pwr Start Seq: 1

Automatic Flash

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry	X															
Exit				X				X								
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Exit																

Flash > Mon: No

Exit Flash: G

Min Flash: 8

Min Recall: No

Cycle Thru Phase: No

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dual Entry				X				X								
Rest In Walk				X				X								

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: Yes

Free Input Enables Pre-Timed: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase				X				X								

Phase Recall Options (MM)2-8

All Timing Plans (1-4)

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X		X				X								
Ped Recall				X				X								
Max Recall																
Soft Recall																
No Rest																
AI Calc		X														

Coordination Options (MM)3-1

Manual Pattern:	Auto
System Source:	TBC
Splits In:	Seconds
Transition:	Smooth
Dwell/Add Time:	0
Dly Coord Wk-Lz:	No
Offset Reference:	Yield
Pedestrian Recall:	Yes
Local Zero Override:	No
Re-Sync Count:	3

ECPI Coordination:	Yes
System Format:	STD
Offset In:	Seconds
Max Select:	Max1
Enable Man Sync:	No
Force Off:	Fixed
Cal Use Ped Tm:	No
Ped Reserve:	No
Fo Add Ini Grn:	Yes
Multisync:	No

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: 0

Pattern Data (MM)3-2

Coordinator Pattern – 1 - OFFPEAK

Split Pattern	1
Cycle	90
Offset Value	12
Actuated Coord	No
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	1
Force Off	Fixed

Coordinator Pattern – 4 - PM

Split Pattern	1
Cycle	90
Offset Value	7
Actuated Coord	No
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	1
Force Off	Fixed

Coordinator Pattern – 7 - AM

Split Pattern	1
Cycle	90
Offset Value	32
Actuated Coord	No
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	1
Force Off	Fixed

Split Pattern Data (MM)3-3

Split Pattern – 1 - OFFPEAK

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Splits (seconds)	20	27	14	29		26	14	29	0	0	0	0	0	0	0	0
Coordinated Phases				X				X								
Vehicle Recalls		X														
Ped Recalls				X				X								
Max Recalls																
Phase Omit					X				X	X	X	X	X	X	X	X

Split Pattern – 4 - PM

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Splits (seconds)	20	27	14	29		26	14	29	0	0	0	0	0	0	0	0
Coordinated Phases				X				X								
Vehicle Recalls		X														
Ped Recalls				X				X								
Max Recalls																
Phase Omit					X				X	X	X	X	X	X	X	X

Split Pattern – 7 - AM

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Splits (seconds)	20	27	14	29		26	14	29	0	0	0	0	0	0	0	0
Coordinated Phases				X				X								
Vehicle Recalls		X														
Ped Recalls				X				X								
Max Recalls																
Phase Omit					X				X	X	X	X	X	X	X	X

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: 0

Action Plan (MM)5-2

MM-8-1: COPY FROM: ACTION PLAN 1 > TO: ACTION PLAN 0 (ALL), THEN MANUALLY CHANGE 4, 7, 99

Action Plan – 1 - OFFPEAK

Pattern	1	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	0	Detector Log	None
Flash	--	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Action Plan – 4 - PM

Pattern	4	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	0	Detector Log	None
Flash	--	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Action Plan – 7- AM

Pattern	7	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	0	Detector Log	None
Flash	--	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Action Plan – 99 – NIGHT FLASH

Pattern	255-FLSH	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	0	Detector Log	None
Flash	EN	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Day Plan (MM)5-3

Day Plan – 1 – SUN

Event	Action Plan	Start Time
1	99	00:00
2	1	09:00

Day Plan – 2 – MON-FRI

Event	Action Plan	Start Time
1	99	00:00
2	1	05:30
3	7	06:00
4	1	09:00
5	4	15:00
6	1	18:00

Day Plan – 3 – SAT

Event	Action Plan	Start Time
1	99	00:00
2	1	07:00

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/ Month	Week of Month/ Year	Day Plan
1	FIXED	1	1	0	1
2	FIXED	12	24	0	1
3	FIXED	12	25	0	1
4	FIXED	7	4	0	1
5	FLOAT	5	2	4	1
6	FLOAT	9	2	1	1
7	FLOAT	11	5	4	1
8	FLOAT	11	6	4	1

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: 0

Preempt Plan (MM)4-1

Preempt Plan 3 - Enable: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X														
Dwell Overlap																

Preempt Plan 4 - Enable: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X				X								
Dwell Overlap																

Vehicle Detector Assignment Plan (MM)6-1

All Plans

Detector	Call Phase	Call Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1	X															
2	2		X														
3	3			X													
4	4				X				X								
5	5					X											
6	6						X										
7	7							X									
8	8				X				X								
9	0																
10	0																
11	1																
12	2																
13	3																
14	4																
15	5																
16	6																

Ped Detector Options (MM)6-3

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X															
2		X				X										
3			X													
4				X				X								
5					X											
6		X				X										
7							X									
8				X				X								
9									X							
10										X						
11											X					
12												X				
13													X			
14														X		
15															X	
16																X

Logic Processor Statement Control (MM)1-8-1

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5
LP 1-15	D	D	D	D	D	D	D	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	D	D	D	.	.	.	.	.	.	.	.	.	.	.	.
LP 45-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

W. LAKEFIELD DR. & W. MORGAN AV. - ASC3 RM CONTROLLER

DRAWING NO: B-15-546-T

SUPERCEDES: B-15-527-T

TIME IN SERVICE: 0

Controller Outputs:

PIN 2-PHASE 4 DW	PHASE 1 RED	PIN 31-PHASE 6 GREEN	PHASE 6 WALK
PIN 3-PHASE 4 WALK	PHASE 1 GREEN	PIN 32-PHASE 5 RED	PHASE 8 DW
PIN 4-PHASE 4 RED	PHASE 2 RED	PIN 33-PHASE 5 YEL	NIC SPEC FUNC 4
PIN 5-PHASE 4 YEL	PHASE 2 YELLOW	PIN 34-PHASE 5 GREEN	PHASE 8 WALK
PIN 6-PHASE 4 GREEN	PHASE 2 GREEN	PIN 35-OVERLAP A GRN	PHASE 4 YELLOW
PIN 7-PHASE 3 RED	PHASE 3 RED	PIN 36-OVERLAP B GRN	PREEMPT 4 STATUS
PIN 8-PHASE 3 YEL	PHASE 3 YELLOW	PIN 37-OVERLAP A YEL	PHASE 1 YELLOW
PIN 9-PHASE 3 GREEN	PHASE 3 GREEN	PIN 38-OVERLAP B YEL	PHASE 7 YELLOW
PIN 10-PED 2 DW	PHASE 4 RED	PIN 83-NIC SPEC FUN 1	PMT 10 STAT BIT E
PIN 11-PED 2 WALK	PHASE 4 GREEN	PIN 84-NIC SPEC FUN 3	PMT 10 STAT BIT E
PIN 12-PHASE 2 RED	PHASE 5 RED	PIN 85-OVERLAP D RED	COORD SPEC FUNC 4
PIN 13-PHASE 2 YEL	PHASE 5 YELLOW	PIN 86-OVERLAP D YEL	COORD SPEC FUNC 7
PIN 15-PHASE 2 GREEN	PHASE 5 GREEN	PIN 87-OVERLAP C GRN	COORD SPEC FUNC 1
PIN 16-PHASE 1 RED	PHASE 6 RED	PIN 88-OVERLAP C RED	OVERLAP C RED
PIN 17-PHASE 1 YEL	PHASE 6 YELLOW	PIN 89-OVERLAP C YEL	OVERLAP C YELLOW
PIN 18-PHASE 1 GREEN	PHASE 6 GREEN	PIN 90-OVERLAP C GRN	OVERLAP C GREEN
PIN 19-PED 8 DW	PHASE 7 RED	PIN 91-CRD FREE STAT	PMT 10 STAT BIT E
PIN 20-PED 8 WALK	PHASE 7 GREEN	PIN 93-CRD SYNC OUT	PMT 10 STAT BIT E
PIN 21-PHASE 8 RED	PHASE 8 RED	PIN 94-OVERLAP B RED	PMT 10 STAT BIT E
PIN 22-PHASE 8 YEL	PHASE 8 YELLOW	PIN 95-OVERLAP B YEL	PMT 10 STAT BIT E
PIN 23-PHASE 8 GREEN	PHASE 8 GREEN	PIN 96-OVERLAP B GRN	PMT 10 STAT BIT E
PIN 24-PHASE 7 RED	PHASE 2 DW	PIN 97-OVERLAP A RED	PMT 10 STAT BIT E
PIN 25-PHASE 7 YEL	PREEMPT 3 STATUS	PIN 98-OVERLAP A YEL	PMT 10 STAT BIT E
PIN 26-PHASE 7 GREEN	PHASE 2 WALK	PIN 99-OVERLAP A GRN	PMT 10 STAT BIT E
PIN 27-PED 6 DW	PHASE 4 DW	PIN100-NIC SPEC FUN 2	PMT 10 STAT BIT E
PIN 28-PED 6 WALK	PHASE 4 WALK	PIN101-C48 FLASH OUT	PMT 10 STAT BIT E
PIN 29-PHASE 6 RED	PHASE 6 DW	PIN102-NIC SPEC FUN 4	AUTOMATIC FLASH
PIN 30-PHASE 6 YEL	NIC SPEC FUNC 3	PIN103-WATCHDOG	WDOG

Controller Inputs:

PIN 39-DETECTOR 02	LP ACTION PLAN 4	PIN 65-DETECTOR 07	DETECTOR 64
PIN 40-DETECTOR 18	LP ACTION PLAN 7	PIN 66-DETECTOR 23	DETECTOR 64
PIN 41-DETECTOR 06	OFFSET BIT 1	PIN 67-PED DETECTOR 02	PREEMPT 3 CALL
PIN 42-DETECTOR 22	C1 STOP TIME ALL	PIN 68-PED DETECTOR 06	PREEMPT 4 CALL
PIN 43-DETECTOR 10	DETECTOR 2	PIN 69-PED DETECTOR 04	C1 MAN CONT ENA
PIN 44-DETECTOR 26	DETECTOR 6	PIN 70-PED DETECTOR 08	C1 INT ADVANCE
PIN 45-DETECTOR 14	DETECTOR 4	PIN 71-PREEMPT 3 CALL	DETECTOR 64
PIN 46-DETECTOR 30	DETECTOR 8	PIN 72-PREEMPT 4 CALL	DETECTOR 64
PIN 47-DETECTOR 04	DETECTOR 2	PIN 73-PREEMPT 5 CALL	DETECTOR 64
PIN 48-DETECTOR 20	DETECTOR 6	PIN 74-PREEMPT 6 CALL	DETECTOR 64
PIN 49-DETECTOR 08	DETECTOR 4	PIN 75-SPLIT DMD 1	DETECTOR 64
PIN 50-DETECTOR 24	DETECTOR 8	PIN 76-DETECTOR 11	DETECTOR 64
PIN 51-PREEMPT 1 CALL	DETECTOR 5	PIN 77-DETECTOR 27	DETECTOR 64
PIN 52-PREEMPT 2 CALL	DETECTOR 1	PIN 78-DETECTOR 15	DETECTOR 64
PIN 53-C1 MAN CONT ENA	DETECTOR 7	PIN 79-DETECTOR 31	DETECTOR 64
PIN 54-TEST A	DETECTOR 3	PIN 80-INT ADVANCE	DETECTOR 64
PIN 55-DETECTOR 17	DETECTOR 5	PIN 81-LOCAL FLASH	DETECTOR 64
PIN 56-DETECTOR 01	DETECTOR 1	PIN 82-STOP TIME	DETECTOR 64
PIN 57-DETECTOR 21	DETECTOR 7		
PIN 58-DETECTOR 05	DETECTOR 3		
PIN 59-DETECTOR 25	PED DETECTOR 2		
PIN 60-DETECTOR 09	PED DETECTOR 2		
PIN 61-DETECTOR 29	PED DETECTOR 4		
PIN 62-DETECTOR 13	PED DETECTOR 8		
PIN 63-DETECTOR 03	DETECTOR 64		
PIN 64-DETECTOR 19	DETECTOR 64		

Note: Changes to the inputs/outputs must be made via the laptop in the shop.

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DIRECTION	NB DRIVEWAY	SB LAKEFIELD	EBLT	WB MORGAN	SPARE	SPARE	WBLT	EB MORGAN	SPARE	N. X-WALK	W. X-WALK	S. X-WALK				
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
	4	5	6	7	8	9	10	11	12	13	14	15	16			
	5	6	7	8	9	10	11	12	13	14	15	16				
	6	7	8	9	10	11	12	13	14	15	16					
	7	8	9	10	11	12	13	14	15	16						
	8	9	10	11	12	13	14	15	16							
	9	10	11	12	13	14	15	16								
	10	11	12	13	14	15	16									
	11	12	13	14	15	16										
	12	13	14	15	16											
	13	14	15	16												
	14	15	16													
	15	16														
	16															

LOCATION:
W. LAKEFIELD AV.
&
W. MORGAN AV.

SHADED COMBINATIONS
 ARE NOT PERMITTED
 DIODES FOR CONFLICTING
 INDICATIONS

CABINET SWITCH LOCATIONS

1	2	3	4	5	6	7
---	---	---	---	---	---	---

8	9	10	11	12	13	14
---	---	----	----	----	----	----

NB	SB	EBLT	WB	-	WBLT

OL-C

EB	-	NXW	WXW	SXW	CY3	R
					CY2	Y
					R1	G

MONITOR IN SERVICE:
DRG. NO: B-15-546-T

W. LOOMIS RD. & S. 27TH ST.

DRAWING NO: B-19-502-T

SUPERCEDES: B-15-763-T

TIME IN SERVICE: 2/14/19 @1525

Date: 1/7/19
Signal No: 9047
Service: 3#4 / 1#8 LTP cable fed from 50A C.B. in count station cabinet
 240/120V service fed from transclosure T-6-S
Master: LOCAL TBC
Cabinet/Controller: P1 CABINET, COBALT SHELF MOUNT CONTROLLER- SOFTWARE VERSION 2.65
Auxiliary Equipment: PE CONF. LIGHTS
Flash Program: NONE- EMERGENCY ALL RED

Program Notes:

DAY PLAN 1: WEEKEND (SAT, SUN), DAY PLAN 2: WEEKDAY (MON-FRI) ACTION PLAN 1: OFFPEAK, ACTION PLAN 7: 0600-0900 PE3: NB/SB PREEMPT (MIN 15 SEC) MAX DELAY IS 23 SECONDS. DET DIST. >1800 FT PE4: EB PREEMPT (MIN 15 SEC) MAX DELAY IS 21 SECONDS. DET DIST. >1400 FT
--

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB WXXW				NB		EB SXW								
Overlap	A	B	C	D	E	F	G	H	I	J	L	K	L	M	N	O
Description																

Controller Sequence (MM)1-1-1

All Sequences (1-16)

REMEMBER TO COPY SEQUENCE 1 TO ALL SEQUENCES

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ring 1	1	2														
Ring 2		6		8												

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X				X		X								
Exclusive PED																

Load Switch Assignments (MMU Channel) (MM)1-3

Switch	Phase/ Overlap	Type	Dimming				Flash		
			Red	Yellow	Green	Dark	Power	Auto	Together
1	1	V				+	R	R	X
2	2	V				+	R	R	X
3						+			
4						+			
5						-			
6	6	V				-	R	R	X
7	4	O				-			
8	8	V				-	R	R	
9	2	P				+			X
10						+			
11						-			
12	8	P				-			
13						+			
14						-			
15						+			
16						-			

Ethernet (MM)1-5-1

Controller IP: 10.17.92.49
Subnet Mask: 255.255.0.0
Default Gateway IP: 10.17.0.1
Server IP: 10.17.91.35
Link Speed/Duplex: 100/Half
Drop-out Time: 10

SDLC Port 1 Config (MM)1-4-1

Term & Facility: "X" FOR BIU 1 AND 2
Detector Rack: "X" FOR BIU 1 AND 2
Enable TS2/MMU Type Cab: Yes
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: No
Enable 3 Crit. RFEs Lockup: Yes
MMU to CU SDLC Ext. Start: Enabled

ECPIP (MM)1-5-6

Controller Address: 0

Color Check Enable (MM) 1-4-3

ENABLE COLOR CHECK: 'X'

MMU/LOAD SWITCH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RED	X	X				X		X								
YELLOW	X	X				X		X								
GREEN	X	X				X		X	X			X				

Designed By: VMAJ

Checked By: SCR

Approved By: JCB

W. LOOMIS RD. & S. 27TH ST.

DRAWING NO: B-19-502-T

SUPERCEDES: B-15-763-T

TIME IN SERVICE: 2/14/19 @1525

Controller Timing Plan (MM)2-1

All Timing Plans (1-4)

REMEMBER TO COPY TIMING PLAN 1 TO ALL TIMING PLANS

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	7	12				12		12								
BK Min Green																
CS Min Green																
Delay Green																
Walk		7						7								
Walk 2																
Walk Max																
Ped Clear		11						12								
Ped Clear 2																
Ped Clear Max																
Ped CO																
Vehicle Ext	1.5							3								
Vehicle Ext 2																
Max 1	10	66				66		19								
Max 2																
Max 3																
DYM Max																
DYM Stp																
Yellow	3.5	4.5				4.5		4								
Red Clear	2.5	1.5				1.5		3								
Red Max																
Red Revert																
ACT B4																
SEC/ACT																
Max Int																
Time B4																
Cars Wt																
STPT Duc																
Time To Reduce																
Min Gap																

Vehicle Overlaps (MM)2-2

--

Vehicle/Pedestrian Overlaps (MM)2-3

Included	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Guaranteed Minimum Time Data (MM)2-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	7	12				12		12								
Walk																
Ped Clear		11						12								
Yellow	3.5	4.5				4.5		4								
Red Clr	2.5	1.5				1.5		3								
OVL Green																

W. LOOMIS RD. & S. 27TH ST.

DRAWING NO: B-19-502-T

SUPERCEDES: B-15-763-T

TIME IN SERVICE: 2/14/19 @1525

Controller Start/Flash (MM) 2-5

Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase		W				G										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Overlap																

Flash > Mon: No

Flash Time: 10

All Red: 6

Pwr Start Seq: 1

Automatic Flash

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry								X								
Exit		X				X										
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Exit																

Flash > Mon: No

Exit Flash: W

Min Flash: 8

Min Recall: Yes

Cycle Thru Phase: Yes

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dual Entry		X				X										
Rest In Walk																

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No

Free Input Enables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

All Timing Plans (1-4)

MANUALLY CHANGE FOR PLANS 2-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X		X								
Ped Recall		X						X								
Max Recall																
Soft Recall																
No Rest																
Al Calc																

Coordination Options (MM)3-1

Manual Pattern:	Auto
System Source:	TBC
Splits In:	Seconds
Transition:	SMOOTH
Dwell/Add Time:	0
Dly Coord Wk-Lz:	No
Offset Reference:	Yellow
Pedestrian Recall:	Yes
Local Zero Override:	No
Re-Sync Count:	3

ECPI Coordination:	Yes
System Format:	STD
Offset In:	Seconds
Max Select:	Max1
Enable Man Sync:	No
Force Off:	Fixed
Cal Use Ped Tm:	No
Ped Reserve:	No
Fo Add Ini Grn:	Yes
Multisync:	No

W. LOOMIS RD. & S. 27TH ST.

DRAWING NO: B-19-502-T

SUPERCEDES: B-15-763-T

TIME IN SERVICE: 2/14/19 @1525

Pattern Data (MM)3-2

Coordinator Pattern – 1 - OFFPEAK

COPY PATTERN 1 TO ALL PATTERNS AND MANUALLY CHANGE 4 AND 7

Split Pattern	1
Cycle	90
Offset Value	73
Actuated Coord	Yes
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	1
Force Off	Fixed

Coordinator Pattern – 4 - PM (NOT USED)

Split Pattern	1
Cycle	90
Offset Value	73
Actuated Coord	Yes
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	1
Force Off	Fixed

Coordinator Pattern – 7 - AM

Split Pattern	7
Cycle	90
Offset Value	80
Actuated Coord	Yes
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	7
Force Off	Fixed

Split Pattern Data (MM)3-3

Split Pattern – 1 - OFFPEAK

COPY SPLIT PATTERN 1 TO ALL PATTERNS AND MANUALL CHANGE 4 AND 7

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Splits (seconds)	16	48				64		26	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit									X	X	X	X	X	X	X	X

Split Pattern – 4 - PM (NOT USED)

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Splits (seconds)	16	48				64		26	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit									X	X	X	X	X	X	X	X

Split Pattern – 7 - AM

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Splits (seconds)	16	48				64		26	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls																
Ped Recalls																
Max Recalls																
Phase Omit									X	X	X	X	X	X	X	X

W. LOOMIS RD. & S. 27TH ST.

DRAWING NO: B-19-502-T

SUPERCEDES: B-15-763-T

TIME IN SERVICE: 2/14/19 @1525

Action Plan (MM)5-2

COPY ACTION PLAN 1 TO ALL PLANS AND MANUALLY CHANGE 4, 7, AND 99 (IF NECESSARY)

Action Plan – 1 - OFFPEAK

Pattern	1	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Action Plan – 4 - PM (NOT USED)

Pattern	1	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Action Plan – 7- AM

Pattern	7	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Action Plan – 99 – NIGHT FLASH (NOT USED)

Pattern	1	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Diming Enable	No		

Day Plan (MM)5-3

Day Plan – 1 – SAT, SUN

Event	Action Plan	Start Time
1	1	00:00
2	0	00:00

Day Plan – 2 – MON-FRI

Event	Action Plan	Start Time
1	7	06:00
2	1	09:00
3	0	00:00

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/ Month	Week of Month/ Year	Day Plan
1	FIXED	1	1	0	1
2	FIXED	12	24	0	1
3	FIXED	12	25	0	1
4	FIXED	7	4	0	1
5	FLOAT	5	2	4	1
6	FLOAT	9	2	1	1
7	FLOAT	11	5	4	1
8	FLOAT	11	6	4	1

W. LOOMIS RD. & S. 27TH ST.

DRAWING NO: B-19-502-T

SUPERCEDES: B-15-763-T

TIME IN SERVICE: 2/14/19 @1525

Preempt Plan (MM)4-1

Preempt Plan 3 (NB/SB) - Enable: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X				X										

Preempt Plan 4 (EB) - Enable: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle								X								

Vehicle Detector Assignment Plan (MM)6-1

All Plans

Detector	Call Phase	Call Phase																Type
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
17	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
2		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
3		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
4		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
5		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
6		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
7		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
24	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
9		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
10		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
11		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
12		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
13		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
14		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
15		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
16		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N

Ped Detector Options (MM)6-3

Detector	Call Phase																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1
2	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3
4
5
6
7
8	X	.	.	.	.	.	.	.	.	.
9
10
11
12
13
14
15
16

Logic Processor Statement Control (MM)1-8-1

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5
LP 1-15	E	E	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30
LP 31-45
LP 45-60
LP 61-75
LP 76-90
LP 91-100

P1 CABINET

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DIRECTION	NBLT	SB 27TH	SPARE	SPARE	SPARE	NB 27TH	PE CONF. LIGHTS	EB LOOMIS	W. X-WALK	SPARE	SPARE	S. X-WALK				
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
	4	5	6	7	8	9	10	11	12	13	14	15	16			
	5	6	7	8	9	10	11	12	13	14	15	16				
	6	7	8	9	10	11	12	13	14	15	16					
	7	8	9	10	11	12	13	14	15	16						
	8	9	10	11	12	13	14	15	16							
	9	10	11	12	13	14	15	16								
	10	11	12	13	14	15	16									
	11	12	13	14	15	16										
	12	13	14	15	16											
	13	14	15	16												
	14	15	16													
	15	16														
	16															

LOCATION
W. LOOMIS RD.
&
S. 27TH ST.

SHADED COMBINATIONS ARE PERMITTED

DETECTOR RACK

NBLT																	PE3
	EB																PE4

SW.1 SW.2 SW.3 SW.4 SW.5 SW.6 SW.7 SW.8 SW.9 SW.10

LOAD SWITCH LOCATIONS

1	2	3	4	5	6
7	8	9	10	11	12

NBLT SB - - - NB

RA	R	-	-	R
SYA	Y	-	-	Y
GA	G	-	-	G

PE EB WXW - - SXW

PE	EB	WXW	-	-	SXW
-	R	DW	-	-	DW
PE3	Y	-	-	-	-
PE4	G	W	-	-	W

NB/SB CONF. →
 EB CONF. →

RA = RED ARROW
 SYA = STEADY YELLOW ARROW
 GA = GREEN ARROW

NOTE: SET MINIMUM FLASH TIME IN MMU TO 8 SEC
 NOTE: DISABLE DUAL INDICATION MONITORING
 FOR LOAD SWITCH 7 (PE CONF LIGHTS)

DRG. NO: B-19-502-T

MMU PROGRAM (MM)1-4-2

MMU PROGRAM [MANUAL] ERROR

CH	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2
1	.	.	.	.	.	.	.	X	X	.	.	.	.	.	.
2	.	.	.	.	.	.	.	X	X	.	.	.	.	.	.
3	.	.	.	.	.	.	.	X	X	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	X	X	.	.	.	.	.	.
7	.	.	.	.	.	.	.	X	X	.	.	.	.	.	.
8	.	.	.	.	.	.	.	X	X	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

MMU SW1 _ND1 _NS1 | 1 | 2 | 3 |
 _LJ1 _LJ2 | 4 | 5 | 6 |
 _LJ3 _LJ4 | 7 | 8 | 9 |
 _LJ5 _LJ6 | SE | 0 | C |

MMU _Status1 _NPE1 | Small

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Note: N/S X-Walks were in ped recall via detector card from time-in-service until 2-9-16 @ 14:20

Date: 12/14/15

Signal No: 9048

Service: 3#4 / 1#8 LTP SERVICE FROM C.C. AT LAKEFIELD & MORGAN (310 L.F.)

Master: KK RIVER PKWY AND 27TH - ASC2 CONTROLLER FOR TRSS

Auxiliary Equipment: 1 1/4" VENT PIPE, PE CONF. LIGHTS W/ 5A FUSES, ENCOM ANTENNAS & MODEM

Flash Program: NONE - EMERGENCY ALL-RED

Program Notes:

EVA: ON N/S FIRE CALL. EVA PHASE IS NB/SB GREEN (VAR LENGTH BUT 15 SEC MIN).
 MAX DELAY TO EVA IS 37 SEC., OPTICOM DET DIST MUST BE AT LEAST 1800 FT.
 EVB: ON E/W FIRE CALL. EVB PHASE IS EB/WB GREEN (VAR LENGTH BUT 15 SEC MIN).
 MAX DELAY TO EVA IS 25.5 SEC., OPTICOM DET DIST MUST BE AT LEAST 1700 FT.
 **NOTE: SEE PREEMPT PLAN (MM)4-1 ON PAGE 6 FOR ADDITIONAL INFORMATION

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	NBLT	SB/WXW	-	WB/NXW	SBLT	NB/EXW	WBLT	EB/SXW								
Overlap	A	B	C	D	E	F	G	H	I	J	L	K	L	M	N	O
Description	-	-	EBLT FYA	WBLT FYA												

Controller Sequence (MM)1-1-1

All Sequences (1-16)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ring 1	1	2	3	4												
Ring 2	5	6	7	8												

Phases In Use / Exclusive PED (MM)1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases in Use	X	X		X	X	X	X	X								
Exclusive PED																

Load Switch Assignments (MMU Channel) (MM)1-3

Switch	Phase/Overlap	Type	Dimming				Flash		
			Red	Yellow	Green	Dark	Power	Auto	Together
1	1	V				+	R	R	X
2	2	V				+	R	R	X
3	3	V				+	R	R	X
4	4	V				+	R	R	X
5	5	V				-	R	R	X
6	6	V				-	R	R	X
7	7	V				-	R	R	X
8	8	V				-	R	R	X
9	2	P				+			
10	4	P				+			
11	6	P				-			
12	8	P				-			
13	1	O				+	R	R	X
14	2	O				-	R	R	X
15	3	O				+	R	R	X
16	4	O				-	R	R	X

Ethernet (MM)1-5-1

Controller IP: 10.17.92.61
 Subnet Mask: 255.255.0.0
 Default Gateway IP: 10.17.0.1
 Server IP: 10.17.91.35
 Link Speed/Duplex: Auto
 Drop-out Time: 10

SDLC Port 1 Config (MM)1-4-1

Term & Facility:
 Detector Rack: "X" for BIU 1
 Enable TS2/MMU Type Cab: No
 Enable MMU Extended Status: No
 Enable SDLC Stop Time: No
 Enable 3 Crit. RFEs Lockup: Yes
 MMU to CU SDLC Ext. Start: Enabled

ECPIP (MM)1-5-6

Controller Address: 7

Designed By: SCR

Checked By: _____

Approved By: _____

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Controller Timing Plan (MM)2-1

All Timing Plans (1-4)

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	7	12		19	7	12	7	15								
BK Min Green																
CS Min Green																
Delay Green																
Walk		5		9		5		10								
Walk 2																
Walk Max																
Ped Clear		15		22		15		26								
Ped Clear 2																
Ped Clear Max																
Ped CO																
Vehicle Ext	3			1.5	3		3	1.5								
Vehicle Ext 2																
Max 1	10	62		30	10	62	9	19								
Max 2																
Max 3																
DYM Max																
DYM Stp																
Yellow	3	4.5		4	3	4.5	3	4								
Red Clear	1	2		3	1	2	1	3								
Red Max																
Red Revert	1	2		3	1	2	1	3								
ACT B4																
SEC/ACT																
Max Int																
Time B4																
Cars Wt																
STPT Duc																
Time To Reduce																
Min Gap																

Vehicle Overlaps (MM)2-2

TMG VEH OVLP: [C] TYPE: OTHER/ECONOLITE																
Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Included:				X												
Flash Green:				1												
TMG VEH OVLP: [D] TYPE: PPLT FYA Protected Phase (Left Turn): 7 Permissive Phase (Opposing Thru): 8 Flashing Arrow Output: Channel 16 Green Overlap																

Vehicle/Pedestrian Overlaps (MM)2-3

Included	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
VEH OL C				X												
VEH OL D								X								

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Controller Start/Flash (MM) 2-5

Start Up

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phase				R				R								
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Overlap			X	X												

Flash > Mon: No

Flash Time: 10

All Red: 6

Pwr Start Seq: 1

Automatic Flash

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Entry				X				X								
Exit		X				X										
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Exit			X	X												

Flash > Mon: No

Exit Flash: R

Min Flash: 8

Min Recall: No

Cycle Thru Phase: No

Controller Options (MM)2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dual Entry		X		X		X		X								
Rest In Walk																

Act Pre-Time (MM)2-7

Pre-Time Mode Enable: No

Free Input Enables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed Phase																

Phase Recall Options (MM)2-8

All Timing Plans (1-4)

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector	X				X											
Vehicle Recall		X		X		X		X								
Ped Recall		X				X										
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Coordination Options (MM)3-1

Manual Pattern:	Auto
System Source:	TBC
Splits In:	Seconds
Transition:	Add Only
Dwell/Add Time:	30
Dly Coord Wk-Lz:	No
Offset Reference:	Yellow
Pedestrian Recall:	Yes
Local Zero Override:	Yes
Re-Sync Count:	3

ECPI Coordination:	Yes
System Format:	STD
Offset In:	Seconds
Max Select:	Max1
Enable Man Sync:	No
Force Off:	Fixed
Cal Use Ped Tm:	No
Ped Reserve:	No
Fo Add Ini Grn:	Yes
Multisync:	No

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Pattern Data (MM)3-2

Coordinator Pattern – 1 - OFFPEAK

Split Pattern	1
Cycle	90
Offset Value	57
Actuated Coord	Yes
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	1
Force Off	Fixed

Coordinator Pattern – 4 - PM

Split Pattern	4
Cycle	90
Offset Value	57
Actuated Coord	Yes
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	4
Force Off	Fixed

Coordinator Pattern – 7 - AM

Split Pattern	7
Cycle	90
Offset Value	68
Actuated Coord	Yes
Actuated Walk Rest	Yes
Phase Reservice	No
Max Select	None

Std (COS)	0
Dwell/Add Time	0
Timing Plan	1
Sequence	1
Action Plan	7
Force Off	Fixed

Split Pattern Data (MM)3-3

Split Pattern – 1 - OFFPEAK

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (seconds)	17	36	0	37	17	36	13	24	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls				X				X								
Ped Recalls		X				X										
Max Recalls																
Phase Omit			X						X	X	X	X	X	X	X	X

Split Pattern – 4 - PM

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (seconds)	17	36	0	37	17	36	13	24	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls				X				X								
Ped Recalls		X				X										
Max Recalls																
Phase Omit			X						X	X	X	X	X	X	X	X

Split Pattern – 7 - AM

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (seconds)	17	36	0	37	17	36	13	24	0	0	0	0	0	0	0	0
Coordinated Phases		X				X										
Vehicle Recalls				X				X								
Ped Recalls		X				X										
Max Recalls																
Phase Omit			X						X	X	X	X	X	X	X	X

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Action Plan (MM)5-2

Action Plan – 1 - OFFPEAK

Pattern	1	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Diming Enable	No		

Action Plan – 4 - PM

Pattern	4	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Diming Enable	No		

Action Plan – 7- AM

Pattern	7	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Diming Enable	No		

Action Plan – 99 – NIGHT FLASH (01:00-06:00) (O.O.S.)

Pattern	FLSH (255)	Override System	No
Timing Plan	1	Sequence	1
Veh Det Plan	1	Detector Log	None
Flash	EN	Red Rest	No
Veh Det Diag Plan	1	Ped Det Diag Plan	1
Diming Enable	No		

Day Plan (MM)5-3

Day Plan – 1 – SAT, SUN

Event	Action Plan	Start Time
1	1	00:00
2	0	00:00

Day Plan – 2 – MON-FRI

Event	Action Plan	Start Time
1	7	06:00
2	1	09:00
3	4	15:00
4	1	18:00
5	0	00:00

Exception Day Program (MM)5-5

Day	Fixed/Float	Month	Day of Week/ Month	Week of Month/ Year	Day Plan
1	FIXED	1	1	0	1
2	FIXED	12	24	0	1
3	FIXED	12	25	0	1
4	FIXED	7	4	0	1
5	FLOAT	5	2	4	1
6	FLOAT	9	2	1	1
7	FLOAT	11	5	4	1
8	FLOAT	11	6	4	1

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Preempt Plan (MM)4-1

Preempt Plan 3 - Enable: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle		X				X										
Dwell Overlap																

Preempt Plan 4 - Enable: Yes

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Trailing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dwell Vehicle				X				X								
Dwell Overlap			F1	F1												

Vehicle Detector Assignment Plan (MM)6-1

All Plans

Detector	Call Phase																Type
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	N
2	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.	N
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	N
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	N
5	X	.	.	.	.	.	.	.	.	.	.	.	N
6	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.	N
7	X	.	.	.	.	.	.	.	.	.	N
8	X	.	.	.	.	.	.	.	.	N
9	X	.	.	.	.	.	.	.	N
10	X	.	.	.	.	.	.	N
11	X	.	.	.	.	.	N
12	X	.	.	.	.	N
13	X	.	.	.	N
14	X	.	.	N
15	X	.	N
16	X	N

Ped Detector Options (MM)6-3

Detector	Call Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
5	X	.	.	.	.	.	.	.	.	.	.	.
6	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
7	X	.	.	.	.	.	.	.	.	.
8	X	.	.	.	.	.	.	.	.
9	X	.	.	.	.	.	.	.
10	X	.	.	.	.	.	.
11	X	.	.	.	.	.
12	X	.	.	.	.
13	X	.	.	.
14	X	.	.
15	X	.
16	X

Logic Processor Statement Control (MM)1-8-1

	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5
LP 1-15	E	E	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	D	D	D	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 45-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	D	D	D	D	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	D	.	.	.	.	.	.	.	.

W. MORGAN AV. & S. 27TH ST. - ASC3 RM CONTROLLER

DRAWING NO: B-15-766-T

SUPERCEDES: B-15-532-T

TIME IN SERVICE: 2-1-16 @ 1200

Controller Outputs:

PIN 2-PHASE 4 DW	PHASE 1 RED	PIN 31-PHASE 6 GREEN	PHASE 6 WALK
PIN 3-PHASE 4 WALK	PHASE 1 GREEN	PIN 32-PHASE 5 RED	PHASE 8 DW
PIN 4-PHASE 4 RED	PHASE 2 RED	PIN 33-PHASE 5 YEL	PHASE 7 GREEN
PIN 5-PHASE 4 YEL	PHASE 2 YELLOW	PIN 34-PHASE 5 GREEN	PHASE 8 WALK
PIN 6-PHASE 4 GREEN	PHASE 2 GREEN	PIN 35-OVERLAP A GRN	PHASE 4 YELLOW
PIN 7-PHASE 3 RED	OVERLAP C RED	PIN 36-OVERLAP B GRN	PHASE 3 GREEN
PIN 8-PHASE 3 YEL	OVERLAP C YELLOW	PIN 37-OVERLAP A YEL	PHASE 1 YELLOW
PIN 9-PHASE 3 GREEN	OVERLAP C GREEN	PIN 38-OVERLAP B YEL	OVERLAP D YELLOW
PIN 10-PED 2 DW	PHASE 4 RED	PIN 83-NIC SPEC FUN 1	PMT 10 STAT BIT E
PIN 11-PED 2 WALK	PHASE 4 GREEN	PIN 84-NIC SPEC FUN 3	PMT 10 STAT BIT E
PIN 12-PHASE 2 RED	PHASE 5 RED	PIN 85-OVERLAP D RED	COORD SPEC FUNC 4
PIN 13-PHASE 2 YEL	PHASE 5 YELLOW	PIN 86-OVERLAP D YEL	COORD SPEC FUNC 7
PIN 15-PHASE 2 GREEN	PHASE 5 GREEN	PIN 87-OVERLAP D GRN	COORD SPEC FUNC 1
PIN 16-PHASE 1 RED	PHASE 6 RED	PIN 88-OVERLAP C RED	PREEMPT 3 STATUS
PIN 17-PHASE 1 YEL	PHASE 6 YELLOW	PIN 89-OVERLAP C YEL	PREEMPT 4 STATUS
PIN 18-PHASE 1 GREEN	PHASE 6 GREEN	PIN 90-OVERLAP C GRN	NIC SPEC FUNC 3
PIN 19-PED 8 DW	OVERLAP D RED	PIN 91-CRD FREE STAT	PMT 10 STAT BIT E
PIN 20-PED 8 WALK	OVERLAP D GREEN	PIN 93-CRD SYNC OUT	PMT 10 STAT BIT E
PIN 21-PHASE 8 RED	PHASE 8 RED	PIN 94-OVERLAP B RED	PMT 10 STAT BIT E
PIN 22-PHASE 8 YEL	PHASE 8 YELLOW	PIN 95-OVERLAP B YEL	PMT 10 STAT BIT E
PIN 23-PHASE 8 GREEN	PHASE 8 GREEN	PIN 96-OVERLAP B GRN	PMT 10 STAT BIT E
PIN 24-PHASE 7 RED	PHASE 2 DW	PIN 97-OVERLAP A RED	PMT 10 STAT BIT E
PIN 25-PHASE 7 YEL	PHASE 1 GREEN	PIN 98-OVERLAP A YEL	PMT 10 STAT BIT E
PIN 26-PHASE 7 GREEN	PHASE 2 WALK	PIN 99-OVERLAP A GRN	PMT 10 STAT BIT E
PIN 27-PED 6 DW	PHASE 4 DW	PIN100-NIC SPEC FUN 2	PMT 10 STAT BIT E
PIN 28-PED 6 WALK	PHASE 4 WALK	PIN101-CAB FLASH OUT	PMT 10 STAT BIT E
PIN 29-PHASE 6 RED	PHASE 6 DW	PIN102-NIC SPEC FUN 4	AUTOMATIC FLASH
PIN 30-PHASE 6 YEL	PHASE 5 GREEN	PIN103-WATCHDOG	WDOG

Controller Inputs:

PIN 39-DETECTOR 02	LP ACTION PLAN 4	PIN 65-DETECTOR 07	DETECTOR 64
PIN 40-DETECTOR 18	LP ACTION PLAN 7	PIN 66-DETECTOR 23	DETECTOR 64
PIN 41-DETECTOR 06	OFFSET BIT 1	PIN 67-PED DETECTOR 02	PREEMPT 3 CALL
PIN 42-DETECTOR 22	C1 STOP TIME ALL	PIN 68-PED DETECTOR 06	PREEMPT 4 CALL
PIN 43-DETECTOR 10	DETECTOR 2	PIN 69-PED DETECTOR 04	C1 MAN CONT ENA
PIN 44-DETECTOR 26	DETECTOR 6	PIN 70-PED DETECTOR 08	C1 INT ADVANCE
PIN 45-DETECTOR 14	DETECTOR 4	PIN 71-PREEMPT 3 CALL	DETECTOR 64
PIN 46-DETECTOR 30	DETECTOR 8	PIN 72-PREEMPT 4 CALL	DETECTOR 64
PIN 47-DETECTOR 04	DETECTOR 12	PIN 73-PREEMPT 5 CALL	DETECTOR 64
PIN 48-DETECTOR 20	DETECTOR 16	PIN 74-PREEMPT 6 CALL	DETECTOR 64
PIN 49-DETECTOR 08	DETECTOR 14	PIN 75-SPLIT DMD 1	DETECTOR 64
PIN 50-DETECTOR 24	DETECTOR 18	PIN 76-DETECTOR 11	DETECTOR 64
PIN 51-PREEMPT 1 CALL	DETECTOR 5	PIN 77-DETECTOR 27	DETECTOR 64
PIN 52-PREEMPT 2 CALL	DETECTOR 1	PIN 78-DETECTOR 15	DETECTOR 64
PIN 53-C1 MAN CONT ENA	DETECTOR 7	PIN 79-DETECTOR 31	DETECTOR 64
PIN 54-TEST A	DETECTOR 3	PIN 80-INT ADVANCE	DETECTOR 64
PIN 55-DETECTOR 17	DETECTOR 15	PIN 81-LOCAL FLASH	DETECTOR 64
PIN 56-DETECTOR 01	DETECTOR 11	PIN 82-STOP TIME	DETECTOR 64
PIN 57-DETECTOR 21	DETECTOR 17		
PIN 58-DETECTOR 05	DETECTOR 13		
PIN 59-DETECTOR 25	PED DETECTOR 2		
PIN 60-DETECTOR 09	PED DETECTOR 6		
PIN 61-DETECTOR 29	PED DETECTOR 4		
PIN 62-DETECTOR 13	PED DETECTOR 8		
PIN 63-DETECTOR 03	DETECTOR 64		
PIN 64-DETECTOR 19	DETECTOR 64		

Note: Changes to the inputs/outputs must be made via the laptop in the shop.

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DIRECTION	NBLT	SB 27TH	EBLT FYA	WB MORGAN	SBLT	NB 27TH	WBLT FYA	EB MORGAN	W. X-WALK	N. X-WALK	E. X-WALK	S. X-WALK		CONF. LIGHTS & SB NTOR SIGNS (OOS)		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
	4	5	6	7	8	9	10	11	12	13	14	15	16			
	5	6	7	8	9	10	11	12	13	14	15	16				
	6	7	8	9	10	11	12	13	14	15	16					
	7	8	9	10	11	12	13	14	15	16						
	8	9	10	11	12	13	14	15	16							
	9	10	11	12	13	14	15	16								
	10	11	12	13	14	15	16									
	11	12	13	14	15	16										
	12	13	14	15	16											
	13	14	15	16												
	14	15	16													
	15	16														
	16															

LOCATION:
W. MORGAN AV.
&
S. 27TH ST.

SHADED COMBINATIONS
 ARE NOT PERMITTED
 DIODES FOR CONFLICTING
 INDICATIONS

CABINET SWITCH LOCATIONS

1	2	3	4	5	6	7
---	---	---	---	---	---	---

8	9	10	11	12	13	14
---	---	----	----	----	----	----

NBLT	SB	EBLT	WB	SBLT	NB	WBLT
		SYA				SYA
		FYA				FYA
		(OL-C)				(OL-D)

EB	WXW	NXW	EXW	SXW	CY3	"A"

SPARE
 EV-A (NB/SB) FLOODLIGHTS
 EV-B (EB/WB) FLOODLIGHTS
 NBRT RED ARROW (O.O.S.)

MONITOR IN SERVICE:
DRG. NO: B-15-766-T

SB NTOR SIGN (O.O.S.) (AUX B) WBLT GA (PHASE 7)

Appendix B
Existing Traffic
Peak Hour Analysis Outputs

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist Midday
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	255	10	110	215	140	5	15	40	95	25	20
Future Volume (vph)	50	255	10	110	215	140	5	15	40	95	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.98	1.00	1.00	0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.987		0.950	0.971	
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	0	1839	1583	1649	1685	1553
Flt Permitted	0.601			0.542				0.987		0.950	0.971	
Satd. Flow (perm)	1097	3471	1517	989	3471	1529	0	1838	1553	1642	1681	1531
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	56	287	7	124	242	157	6	17	45	107	28	14
Shared Lane Traffic (%)										38%		
Lane Group Flow (vph)	56	287	7	124	242	157	0	23	45	66	69	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist Midday
 02/24/2023

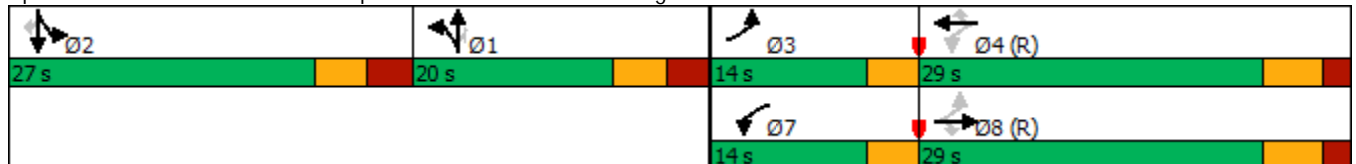


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	57.5	47.7	47.7	60.7	52.2	52.2		10.2	10.2	11.0	11.0	11.0
Actuated g/C Ratio	0.64	0.53	0.53	0.67	0.58	0.58		0.11	0.11	0.12	0.12	0.12
v/c Ratio	0.07	0.16	0.01	0.17	0.12	0.18		0.11	0.26	0.33	0.34	0.08
Control Delay	8.6	15.0	17.5	5.9	13.3	15.0		37.1	40.4	40.5	40.6	35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	15.0	17.5	5.9	13.3	15.0		37.1	40.4	40.5	40.6	35.2
LOS	A	B	B	A	B	B		D	D	D	D	D
Approach Delay		14.0			12.1			39.3			40.0	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 12 (13%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 18.2
 Intersection LOS: B
 Intersection Capacity Utilization 42.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	287	7	124	242	157	23	45	66	69	14
v/c Ratio	0.07	0.16	0.01	0.17	0.12	0.18	0.11	0.26	0.33	0.34	0.08
Control Delay	8.6	15.0	17.5	5.9	13.3	15.0	37.1	40.4	40.5	40.6	35.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	15.0	17.5	5.9	13.3	15.0	37.1	40.4	40.5	40.6	35.2
Queue Length 50th (ft)	12	51	2	21	37	48	12	24	36	38	7
Queue Length 95th (ft)	31	88	12	49	70	96	34	55	75	77	24
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	813	1838	803	770	2013	887	275	232	375	383	348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.16	0.01	0.16	0.12	0.18	0.08	0.19	0.18	0.18	0.04

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist Midday
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↘	↗	↘	↗	↗
Traffic Volume (vph)	50	255	10	110	215	140	5	15	40	95	25	20
Future Volume (vph)	50	255	10	110	215	140	5	15	40	95	25	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1735	3471	1519	1735	3471	1532		1839	1539	1649	1686	1526
Flt Permitted	0.60	1.00	1.00	0.54	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1098	3471	1519	991	3471	1532		1839	1539	1649	1686	1526
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	56	287	7	124	242	157	6	17	45	107	28	14
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	287	7	124	242	157	0	23	45	66	69	14
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	49.6	43.7	43.7	55.0	46.4	46.4		6.2	6.2	9.0	9.0	9.0
Effective Green, g (s)	49.6	43.7	43.7	55.0	46.4	46.4		6.2	6.2	9.0	9.0	9.0
Actuated g/C Ratio	0.55	0.49	0.49	0.61	0.52	0.52		0.07	0.07	0.10	0.10	0.10
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	646	1685	737	676	1789	789		126	106	164	168	152
v/s Ratio Prot	0.01	0.08		c0.02	0.07			0.01		0.04	c0.04	
v/s Ratio Perm	0.04		0.00	0.09		c0.10			c0.03			0.01
v/c Ratio	0.09	0.17	0.01	0.18	0.14	0.20		0.18	0.42	0.40	0.41	0.09
Uniform Delay, d1	9.4	13.0	12.0	7.4	11.4	11.8		39.5	40.2	38.0	38.0	36.8
Progression Factor	1.00	1.00	1.00	0.69	0.97	0.97		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.0	0.1	0.2	0.6		0.7	2.7	2.2	2.2	0.4
Delay (s)	9.4	13.2	12.0	5.2	11.2	12.0		40.2	42.9	40.2	40.2	37.1
Level of Service	A	B	B	A	B	B		D	D	D	D	D
Approach Delay (s)		12.6			10.0			42.0			39.9	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.25	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	42.5%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

exist Midday
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	390	1	0	465	0	35
Future Volume (vph)	390	1	0	465	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3471	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3471	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		2
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	1%	1%
Adj. Flow (vph)	406	1	0	484	0	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	0	484	0	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	390	1	0	465	0	35
Future Vol, veh/h	390	1	0	465	0	35
Conflicting Peds, #/hr	0	1	1	0	1	2
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	96	96	96	96	96	96
Heavy Vehicles, %	4	4	1	1	1	1
Mvmt Flow	406	1	0	484	0	36

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	207
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	802
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	800
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	800	-	-	-
HCM Lane V/C Ratio	0.046	-	-	-
HCM Control Delay (s)	9.7	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

exist Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	90	180	155	205	255	150	140	780	190	125	890	70
Future Volume (vph)	90	180	155	205	255	150	140	780	190	125	890	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.98	1.00	1.00	
Frt			0.850		0.945				0.850		0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	4732	0	3388	5019	1553	3405	4982	0
Flt Permitted	0.496			0.504			0.250			0.320		
Satd. Flow (perm)	913	3505	1533	926	4732	0	891	5019	1527	1145	4982	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	3		6	6		3	7		7	7		7
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	94	188	100	214	266	156	146	813	123	130	927	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	188	100	214	422	0	146	813	123	130	1000	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

exist Midday
02/24/2023

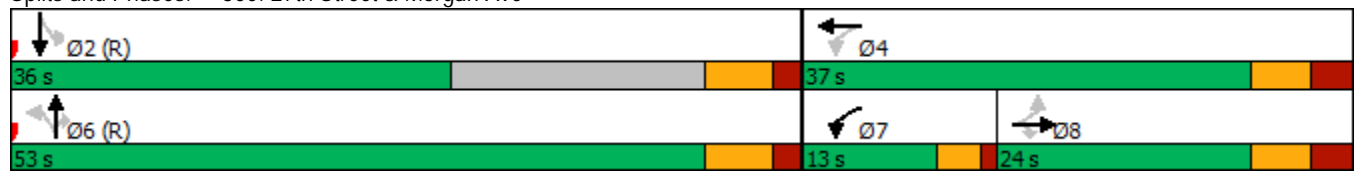


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	15.6	15.6	15.6	31.6	28.6		47.9	47.9	47.9	47.9	47.9	
Actuated g/C Ratio	0.17	0.17	0.17	0.35	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.59	0.31	0.38	0.52	0.28		0.31	0.30	0.15	0.21	0.38	
Control Delay	54.1	37.0	40.5	26.8	23.4		9.9	8.1	7.9	12.5	13.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	54.1	37.0	40.5	26.8	23.4		9.9	8.1	7.9	12.5	13.0	
LOS	D	D	D	C	C		A	A	A	B	B	
Approach Delay					24.6		8.3				12.9	
Approach LOS					C		A				B	

Intersection Summary

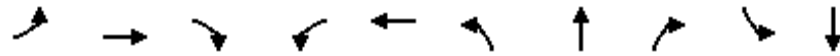
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 17.1 Intersection LOS: B
 Intersection Capacity Utilization 79.6% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

exist Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	188	100	214	422	146	813	123	130	1000
v/c Ratio	0.59	0.31	0.38	0.52	0.28	0.31	0.30	0.15	0.21	0.38
Control Delay	54.1	37.0	40.5	26.8	23.4	9.9	8.1	7.9	12.5	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	37.0	40.5	26.8	23.4	9.9	8.1	7.9	12.5	13.0
Queue Length 50th (ft)	55	55	56	90	65	14	57	23	18	113
Queue Length 95th (ft)	#112	89	107	144	89	24	71	42	37	150
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	172	662	289	408	1577	474	2668	811	609	2649
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.28	0.35	0.52	0.27	0.31	0.30	0.15	0.21	0.38

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 300: 27th Street & Morgan Ave

exist Midday
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	90	180	155	205	255	150	140	780	190	125	890	70
Future Volume (veh/h)	90	180	155	205	255	150	140	780	190	125	890	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1852	1852	1841	1858	1858	1858
Adj Flow Rate, veh/h	94	188	100	214	266	156	146	812	123	130	927	73
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	3	3
Cap, veh/h	239	588	256	381	1051	480	622	2725	827	714	2563	201
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	952	3526	1535	1767	3377	1544	1081	5057	1535	1153	4756	373
Grp Volume(v), veh/h	94	188	100	214	266	156	146	812	123	130	659	341
Grp Sat Flow(s),veh/h/ln	952	1763	1535	1767	1689	1544	541	1686	1535	576	1691	1747
Q Serve(g_s), s	8.7	4.6	5.7	8.8	5.3	7.0	6.4	5.2	2.3	5.9	10.0	10.1
Cycle Q Clear(g_c), s	8.7	4.6	5.7	8.8	5.3	7.0	16.5	5.2	2.3	11.1	10.0	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	239	588	256	381	1051	480	622	2725	827	714	1823	941
V/C Ratio(X)	0.39	0.32	0.39	0.56	0.25	0.32	0.23	0.30	0.15	0.18	0.36	0.36
Avail Cap(c_a), veh/h	260	666	290	381	1126	515	622	2725	827	714	1823	941
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.5	37.6	38.1	26.2	23.2	23.8	10.9	6.6	6.2	13.7	11.9	11.9
Incr Delay (d2), s/veh	0.4	0.1	0.4	1.9	0.0	0.1	0.8	0.3	0.4	0.6	0.6	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(95%),veh/ln	3.9	3.7	4.0	6.9	3.7	4.5	1.2	2.9	1.4	1.4	6.4	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	37.7	38.5	28.1	23.2	23.9	11.7	6.9	6.6	14.2	12.4	13.0
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		382			636			1081			1130	
Approach Delay, s/veh		38.5			25.0			7.5			12.8	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		13.1		9.0		18.5	10.8	10.7				
Green Ext Time (p_c), s		7.2		1.4		8.9	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay				16.5								
HCM 6th LOS				B								

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

exist Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖↗	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	335	85	120	805	920	330
Future Volume (vph)	335	85	120	805	920	330
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.98	1.00			0.98
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	3372	4995	5036	1568
Fl _t Permitted	0.950		0.235			
Satd. Flow (perm)	3423	1556	833	4995	5036	1543
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						344
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	2	3	12			5
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Adj. Flow (vph)	349	55	125	839	958	344
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	55	125	839	958	344
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

exist Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.7	14.7	62.3	62.3	49.3	49.3
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.55	0.55
v/c Ratio	0.62	0.22	0.16	0.24	0.35	0.34
Control Delay	40.0	33.9	5.3	5.5	12.6	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.9	5.3	5.5	12.6	5.1
LOS	D	C	A	A	B	A
Approach Delay	39.2			5.5	10.6	
Approach LOS	D			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 13.1
 Intersection LOS: B
 Intersection Capacity Utilization 49.4%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

exist Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	349	55	125	839	958	344
v/c Ratio	0.62	0.22	0.16	0.24	0.35	0.34
Control Delay	40.0	33.9	5.3	5.5	12.6	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.9	5.3	5.5	12.6	5.1
Queue Length 50th (ft)	96	28	9	54	135	65
Queue Length 95th (ft)	134	59	21	82	191	120
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	724	328	859	3460	2760	1001
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	0.48	0.17	0.15	0.24	0.35	0.34
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

exist Midday
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (veh/h)	335	85	120	805	920	330
Future Volume (veh/h)	335	85	120	805	920	330
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	1844	1844	1856	1856
Adj Flow Rate, veh/h	349	55	125	839	958	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	3	3
Cap, veh/h	461	211	882	3635	2944	
Arrive On Green	0.13	0.13	0.07	0.72	0.19	0.00
Sat Flow, veh/h	3456	1585	3406	5199	5233	1572
Grp Volume(v), veh/h	349	55	125	839	958	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1703	1678	1689	1572
Q Serve(g_s), s	8.8	2.8	1.1	5.0	14.7	0.0
Cycle Q Clear(g_c), s	8.8	2.8	1.1	5.0	14.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	461	211	882	3635	2944	
V/C Ratio(X)	0.76	0.26	0.14	0.23	0.33	
Avail Cap(c_a), veh/h	730	335	1007	3635	2944	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.92	0.00
Uniform Delay (d), s/veh	37.6	35.0	6.6	4.2	21.2	0.0
Incr Delay (d2), s/veh	2.6	0.6	0.0	0.1	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	2.0	0.6	2.4	10.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.2	35.7	6.6	4.3	21.4	0.0
LnGrp LOS	D	D	A	A	C	
Approach Vol, veh/h	404			964	958	
Approach Delay, s/veh	39.6			4.6	21.4	
Approach LOS	D			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	58.3			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	16.7			7.0	10.8
Green Ext Time (p_c), s	0.1	7.2			6.9	0.9

Intersection Summary

HCM 6th Ctrl Delay			17.6			
HCM 6th LOS			B			

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist PM
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	330	15	85	355	200	5	20	45	180	25	55
Future Volume (vph)	50	330	15	85	355	200	5	20	45	180	25	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.98	1.00	1.00	0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.991		0.950	0.964	
Satd. Flow (prot)	1752	3505	1568	1770	3539	1583	0	1864	1599	1698	1723	1599
Flt Permitted	0.525			0.531				0.991		0.950	0.964	
Satd. Flow (perm)	967	3505	1531	988	3539	1558	0	1862	1574	1696	1721	1570
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	54	355	10	91	382	215	5	22	48	194	27	37
Shared Lane Traffic (%)										43%		
Lane Group Flow (vph)	54	355	10	91	382	215	0	27	48	111	110	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist PM
 02/24/2023

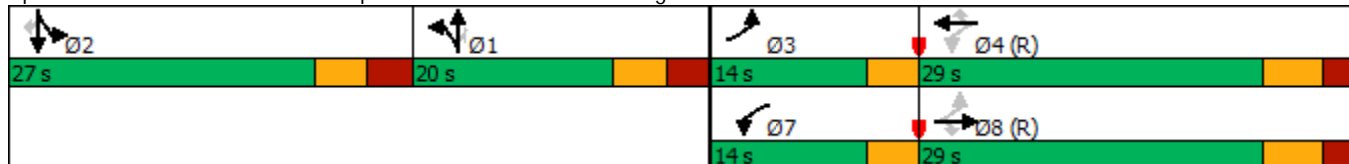


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	50.4	41.9	41.9	51.7	42.6	42.6		10.2	10.2	12.7	12.7	12.7
Actuated g/C Ratio	0.56	0.47	0.47	0.57	0.47	0.47		0.11	0.11	0.14	0.14	0.14
v/c Ratio	0.09	0.22	0.01	0.14	0.23	0.29		0.13	0.27	0.46	0.45	0.17
Control Delay	10.6	17.9	19.1	17.9	31.8	34.8		37.2	40.5	41.2	40.8	34.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	17.9	19.1	17.9	31.8	34.8		37.2	40.5	41.2	40.8	34.4
LOS	B	B	B	B	C	C		D	D	D	D	C
Approach Delay		17.0			30.9			39.3			40.1	
Approach LOS		B			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 7 (8%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 28.9 Intersection LOS: C
 Intersection Capacity Utilization 42.5% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues

exist PM

100: Office Depot D/W/Lakefield Drive & Morgan Ave

02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	355	10	91	382	215	27	48	111	110	37
v/c Ratio	0.09	0.22	0.01	0.14	0.23	0.29	0.13	0.27	0.46	0.45	0.17
Control Delay	10.6	17.9	19.1	17.9	31.8	34.8	37.2	40.5	41.2	40.8	34.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	17.9	19.1	17.9	31.8	34.8	37.2	40.5	41.2	40.8	34.4
Queue Length 50th (ft)	13	66	3	28	105	113	14	25	62	62	19
Queue Length 95th (ft)	34	116	15	m64	150	187	39	59	109	108	44
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	658	1631	712	678	1673	736	279	236	386	392	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.22	0.01	0.13	0.23	0.29	0.10	0.20	0.29	0.28	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist PM
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↘	↘	↗	↘		↗	↘	↘	↗	↘
Traffic Volume (vph)	50	330	15	85	355	200	5	20	45	180	25	55
Future Volume (vph)	50	330	15	85	355	200	5	20	45	180	25	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1752	3505	1534	1769	3539	1560		1864	1571	1698	1722	1564
Flt Permitted	0.53	1.00	1.00	0.53	1.00	1.00		0.99	1.00	0.95	0.96	1.00
Satd. Flow (perm)	969	3505	1534	990	3539	1560		1864	1571	1698	1722	1564
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	54	355	10	91	382	215	5	22	48	194	27	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	355	10	91	382	215	0	27	48	111	110	37
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	46.0	40.0	40.0	47.2	40.6	40.6		8.2	8.2	12.7	12.7	12.7
Effective Green, g (s)	46.0	40.0	40.0	47.2	40.6	40.6		8.2	8.2	12.7	12.7	12.7
Actuated g/C Ratio	0.51	0.44	0.44	0.52	0.45	0.45		0.09	0.09	0.14	0.14	0.14
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	547	1557	681	576	1596	703		169	143	239	242	220
v/s Ratio Prot	0.01	0.10		c0.01	0.11			0.01		c0.07	0.06	
v/s Ratio Perm	0.04		0.01	0.07		c0.14			c0.03			0.02
v/c Ratio	0.10	0.23	0.01	0.16	0.24	0.31		0.16	0.34	0.46	0.45	0.17
Uniform Delay, d1	11.1	15.5	14.0	10.7	15.2	15.7		37.7	38.3	35.5	35.5	34.0
Progression Factor	1.00	1.00	1.00	1.74	1.85	1.82		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.0	0.1	0.3	1.1		0.4	1.4	1.9	1.8	0.5
Delay (s)	11.2	15.8	14.0	18.7	28.5	29.6		38.2	39.7	37.5	37.3	34.5
Level of Service	B	B	B	B	C	C		D	D	D	D	C
Approach Delay (s)		15.2			27.5			39.2			37.0	
Approach LOS		B			C			D			D	

Intersection Summary		
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.33	C
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	42.5%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

exist PM
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	555	1	0	640	0	20
Future Volume (vph)	555	1	0	640	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	617	1	0	711	0	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	618	0	0	711	0	22
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	555	1	0	640	0	20
Future Vol, veh/h	555	1	0	640	0	20
Conflicting Peds, #/hr	0	1	1	0	1	1
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	617	1	0	711	0	22

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	311
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	688
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	687
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	687	-	-	-
HCM Lane V/C Ratio	0.032	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

exist PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	70	310	195	205	400	140	155	870	200	140	1205	85
Future Volume (vph)	70	310	195	205	400	140	155	870	200	140	1205	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	0.99		0.98	1.00	1.00		1.00		0.99	1.00	1.00	
Fr _t			0.850		0.961				0.850		0.990	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3438	1538	1770	4863	0	3421	5068	1568	3438	5036	0
Fl _t Permitted	0.430			0.420			0.154			0.284		
Satd. Flow (perm)	774	3438	1511	781	4863	0	554	5068	1546	1027	5036	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	7		3	3		7	13		3	3		13
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	73	323	126	214	417	146	161	906	129	146	1255	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	323	126	214	563	0	161	906	129	146	1344	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

exist PM
02/24/2023

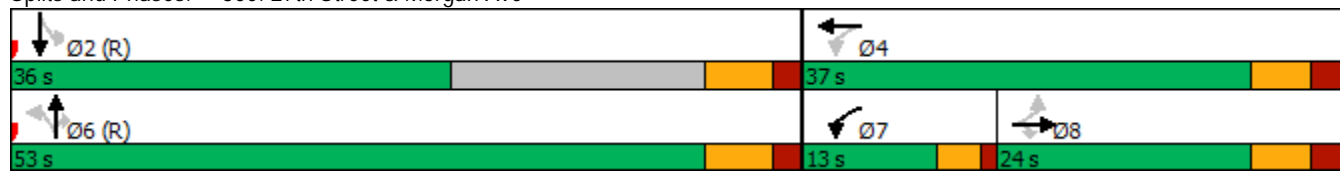


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	15.5	15.5	15.5	31.5	28.5		48.0	48.0	48.0	48.0	48.0	
Actuated g/C Ratio	0.17	0.17	0.17	0.35	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.55	0.55	0.48	0.58	0.37		0.55	0.34	0.16	0.27	0.50	
Control Delay	49.1	36.1	39.1	28.6	24.5		17.7	8.5	8.2	13.3	14.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	49.1	36.1	39.1	28.6	24.5		17.7	8.5	8.2	13.3	14.3	
LOS	D	D	D	C	C		B	A	A	B	B	
Approach Delay	38.6			25.6			9.7			14.2		
Approach LOS	D			C			A			B		

Intersection Summary

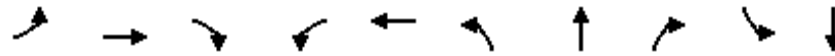
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 18.3 Intersection LOS: B
 Intersection Capacity Utilization 86.1% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

exist PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	73	323	126	214	563	161	906	129	146	1344
v/c Ratio	0.55	0.55	0.48	0.58	0.37	0.55	0.34	0.16	0.27	0.50
Control Delay	49.1	36.1	39.1	28.6	24.5	17.7	8.5	8.2	13.3	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	36.1	39.1	28.6	24.5	17.7	8.5	8.2	13.3	14.3
Queue Length 50th (ft)	39	90	66	90	90	17	67	25	21	165
Queue Length 95th (ft)	#80	129	117	143	117	50	81	45	43	213
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	146	649	285	372	1621	295	2703	824	547	2685
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.50	0.44	0.58	0.35	0.55	0.34	0.16	0.27	0.50

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 300: 27th Street & Morgan Ave

exist PM
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	70	310	195	205	400	140	155	870	200	140	1205	85
Future Volume (veh/h)	70	310	195	205	400	140	155	870	200	140	1205	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1867	1867	1856	1873	1873	1873
Adj Flow Rate, veh/h	73	323	126	214	417	146	161	906	129	146	1255	89
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	2	2	2
Cap, veh/h	217	578	251	329	1171	391	457	2747	831	660	2604	185
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	822	3469	1508	1781	3763	1256	786	5098	1542	1056	4833	343
Grp Volume(v), veh/h	73	323	126	214	375	188	161	906	129	146	885	459
Grp Sat Flow(s),veh/h/ln	822	1735	1508	1781	1702	1615	393	1699	1542	528	1705	1766
Q Serve(g_s), s	7.8	8.2	7.3	8.7	7.7	8.2	12.6	5.9	2.4	7.6	14.6	14.6
Cycle Q Clear(g_c), s	7.8	8.2	7.3	8.7	7.7	8.2	27.2	5.9	2.4	13.5	14.6	14.6
Prop In Lane	1.00		1.00	1.00		0.78	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	217	578	251	329	1059	502	457	2747	831	660	1837	952
V/C Ratio(X)	0.34	0.56	0.50	0.65	0.35	0.37	0.35	0.33	0.16	0.22	0.48	0.48
Avail Cap(c_a), veh/h	235	655	285	329	1135	538	457	2747	831	660	1837	952
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	39.3	38.9	26.6	24.0	24.2	14.7	6.7	6.2	14.5	12.9	12.9
Incr Delay (d2), s/veh	0.3	0.3	0.6	4.5	0.1	0.2	2.0	0.3	0.4	0.8	0.9	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	6.7	5.2	7.2	5.5	5.5	1.9	3.3	1.5	1.7	9.0	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	39.6	39.5	31.1	24.1	24.3	16.7	7.0	6.6	15.3	13.8	14.7
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		522			777			1196			1490	
Approach Delay, s/veh		39.6			26.1			8.3			14.2	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		16.6		10.2		29.2	10.7	10.2				
Green Ext Time (p_c), s		8.2		1.9		8.7	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.1								
HCM 6th LOS				B								

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

exist PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	335	95	105	930	1165	440
Future Volume (vph)	335	95	105	930	1165	440
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3367	1553	3438	5093	5085	1583
Fl _t Permitted	0.950		0.173			
Satd. Flow (perm)	3362	1530	626	5093	5085	1560
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						387
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	4			4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	345	61	108	959	1201	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	345	61	108	959	1201	454
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

exist PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.7	14.7	62.3	62.3	51.9	51.9
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.58	0.58
v/c Ratio	0.63	0.24	0.17	0.27	0.41	0.43
Control Delay	40.2	34.4	5.4	5.7	11.6	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	34.4	5.4	5.7	11.6	5.7
LOS	D	C	A	A	B	A
Approach Delay	39.3			5.7	10.0	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 12.3
 Intersection LOS: B
 Intersection Capacity Utilization 54.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

exist PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	345	61	108	959	1201	454
v/c Ratio	0.63	0.24	0.17	0.27	0.41	0.43
Control Delay	40.2	34.4	5.4	5.7	11.6	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	34.4	5.4	5.7	11.6	5.7
Queue Length 50th (ft)	95	31	8	64	183	106
Queue Length 95th (ft)	132	64	18	95	249	188
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	710	323	745	3525	2932	1063
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	0.49	0.19	0.14	0.27	0.41	0.43
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

exist PM
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔↔	↑↑↑	↓↓↓	↔
Traffic Volume (veh/h)	335	95	105	930	1165	440
Future Volume (veh/h)	335	95	105	930	1165	440
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	1841	1841	1873	1873	1870	1870
Adj Flow Rate, veh/h	345	61	108	959	1201	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	2	2	2	2
Cap, veh/h	453	208	785	3694	2977	
Arrive On Green	0.13	0.13	0.07	0.72	0.39	0.00
Sat Flow, veh/h	3401	1560	3461	5283	5274	1585
Grp Volume(v), veh/h	345	61	108	959	1201	0
Grp Sat Flow(s),veh/h/ln	1700	1560	1731	1705	1702	1585
Q Serve(g_s), s	8.8	3.2	0.9	5.8	15.3	0.0
Cycle Q Clear(g_c), s	8.8	3.2	0.9	5.8	15.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	453	208	785	3694	2977	
V/C Ratio(X)	0.76	0.29	0.14	0.26	0.40	
Avail Cap(c_a), veh/h	718	329	918	3694	2977	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.85	0.00
Uniform Delay (d), s/veh	37.6	35.2	6.7	4.3	16.1	0.0
Incr Delay (d2), s/veh	2.7	0.8	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	2.2	0.5	2.8	10.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.3	36.0	6.7	4.4	16.4	0.0
LnGrp LOS	D	D	A	A	B	
Approach Vol, veh/h				1067	1201	
Approach Delay, s/veh				4.7	16.4	
Approach LOS				A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	58.5			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	17.3			7.8	10.8
Green Ext Time (p_c), s	0.1	9.3			8.2	0.9

Intersection Summary

HCM 6th Ctrl Delay			15.3			
HCM 6th LOS			B			

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist SAT
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↗	↗	↘	↗	↗
Traffic Volume (vph)	60	215	10	110	215	140	5	20	70	130	35	35
Future Volume (vph)	60	215	10	110	215	140	5	20	70	130	35	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		1.00	0.98	1.00	1.00	0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.990		0.950	0.972	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1844	1583	1665	1703	1568
Flt Permitted	0.611			0.595				0.990		0.950	0.972	
Satd. Flow (perm)	1136	3539	1540	1105	3539	1558	0	1843	1559	1663	1702	1546
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	63	226	7	116	226	147	5	21	74	137	37	23
Shared Lane Traffic (%)										37%		
Lane Group Flow (vph)	63	226	7	116	226	147	0	26	74	86	88	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist SAT
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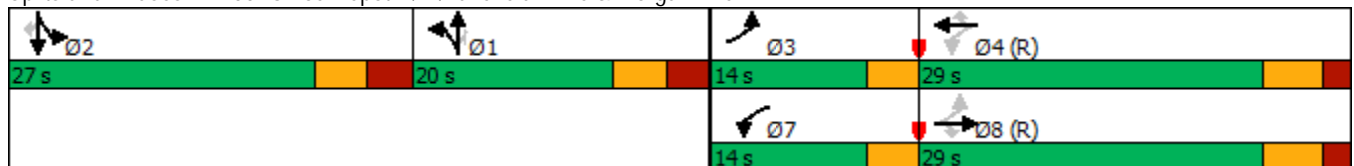


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	53.5	46.1	46.1	55.6	47.1	47.1		10.9	10.9	11.8	11.8	11.8
Actuated g/C Ratio	0.59	0.51	0.51	0.62	0.52	0.52		0.12	0.12	0.13	0.13	0.13
v/c Ratio	0.09	0.12	0.01	0.16	0.12	0.18		0.12	0.39	0.39	0.39	0.11
Control Delay	10.6	17.6	19.9	6.8	13.8	15.4		35.8	42.5	40.7	40.5	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	17.6	19.9	6.8	13.8	15.4		35.8	42.5	40.7	40.5	34.5
LOS	B	B	B	A	B	B		D	D	D	D	C
Approach Delay		16.2			12.6			40.7			39.9	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 12 (13%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 21.1
 Intersection LOS: C
 Intersection Capacity Utilization 42.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues

exist SAT

100: Office Depot D/W/Lakefield Drive & Morgan Ave

02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	226	7	116	226	147	26	74	86	88	23
v/c Ratio	0.09	0.12	0.01	0.16	0.12	0.18	0.12	0.39	0.39	0.39	0.11
Control Delay	10.6	17.6	19.9	6.8	13.8	15.4	35.8	42.5	40.7	40.5	34.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	17.6	19.9	6.8	13.8	15.4	35.8	42.5	40.7	40.5	34.5
Queue Length 50th (ft)	14	40	2	21	32	41	14	40	48	49	12
Queue Length 95th (ft)	39	79	13	54	65	95	36	79	90	92	33
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	777	1811	788	778	1853	815	276	233	379	387	352
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.12	0.01	0.15	0.12	0.18	0.09	0.32	0.23	0.23	0.07

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

exist SAT
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↘	↗	↘	↗	↗
Traffic Volume (vph)	60	215	10	110	215	140	5	20	70	130	35	35
Future Volume (vph)	60	215	10	110	215	140	5	20	70	130	35	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1768	3539	1545	1768	3539	1561		1845	1556	1665	1703	1542
Flt Permitted	0.61	1.00	1.00	0.59	1.00	1.00		0.99	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1137	3539	1545	1107	3539	1561		1845	1556	1665	1703	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	63	226	7	116	226	147	5	21	74	137	37	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	63	226	7	116	226	147	0	26	74	86	88	23
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	47.7	41.6	41.6	49.9	42.7	42.7		8.9	8.9	9.8	9.8	9.8
Effective Green, g (s)	47.7	41.6	41.6	49.9	42.7	42.7		8.9	8.9	9.8	9.8	9.8
Actuated g/C Ratio	0.53	0.46	0.46	0.55	0.47	0.47		0.10	0.10	0.11	0.11	0.11
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	645	1635	714	666	1679	740		182	153	181	185	167
v/s Ratio Prot	0.01	0.06		c0.01	0.06			0.01		0.05	c0.05	
v/s Ratio Perm	0.05		0.00	0.08		c0.09			c0.05			0.01
v/c Ratio	0.10	0.14	0.01	0.17	0.13	0.20		0.14	0.48	0.48	0.48	0.14
Uniform Delay, d1	10.3	13.9	13.1	9.6	13.3	13.7		37.1	38.4	37.7	37.7	36.3
Progression Factor	1.00	1.00	1.00	0.64	0.83	0.83		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.0	0.1	0.2	0.6		0.4	2.4	2.7	2.6	0.5
Delay (s)	10.4	14.1	13.1	6.3	11.2	12.0		37.4	40.8	40.4	40.3	36.8
Level of Service	B	B	B	A	B	B		D	D	D	D	D
Approach Delay (s)		13.3			10.2			39.9			39.9	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.28	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	42.5%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

exist SAT
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	415	1	0	465	0	35
Future Volume (vph)	415	1	0	465	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	466	1	0	522	0	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	467	0	0	522	0	39
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	21.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	415	1	0	465	0	35
Future Vol, veh/h	415	1	0	465	0	35
Conflicting Peds, #/hr	0	1	1	0	1	1
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	89	89	89	89	89	89
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	466	1	0	522	0	39

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	236
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	769
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	768
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	768	-	-	-
HCM Lane V/C Ratio	0.051	-	-	-
HCM Control Delay (s)	9.9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

exist SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	85	195	170	170	235	120	155	845	205	100	920	75
Future Volume (vph)	85	195	170	170	235	120	155	845	205	100	920	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.99	1.00	1.00	
Frt			0.850		0.949				0.850		0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1787	4847	0	3489	5168	1599	3438	5030	0
Flt Permitted	0.528			0.498			0.245			0.301		
Satd. Flow (perm)	980	3539	1555	935	4847	0	899	5168	1576	1089	5030	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	4		3	3		4	10		3	3		10
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	87	199	108	173	240	122	158	862	130	102	939	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	199	108	173	362	0	158	862	130	102	1016	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

exist SAT
02/24/2023

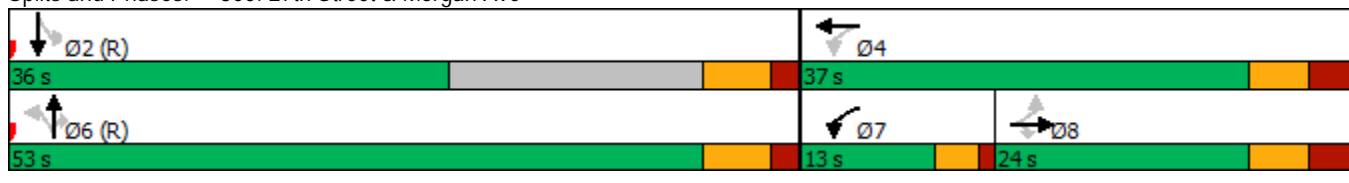


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	15.4	15.4	15.4	31.2	28.2		48.3	48.3	48.3	48.3	48.3	
Actuated g/C Ratio	0.17	0.17	0.17	0.35	0.31		0.54	0.54	0.54	0.54	0.54	
v/c Ratio	0.52	0.33	0.41	0.42	0.24		0.33	0.31	0.15	0.17	0.38	
Control Delay	52.9	41.8	45.3	24.7	23.2		9.7	7.8	7.7	12.0	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	41.8	45.3	24.7	23.2		9.7	7.8	7.7	12.0	12.7	
LOS	D	D	D	C	C		A	A	A	B	B	
Approach Delay	45.2			23.7			8.1			12.7		
Approach LOS	D			C			A			B		

Intersection Summary

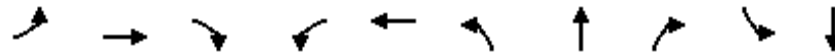
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 16.9 Intersection LOS: B
 Intersection Capacity Utilization 80.3% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

exist SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	87	199	108	173	362	158	862	130	102	1016
v/c Ratio	0.52	0.33	0.41	0.42	0.24	0.33	0.31	0.15	0.17	0.38
Control Delay	52.9	41.8	45.3	24.7	23.2	9.7	7.8	7.7	12.0	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	41.8	45.3	24.7	23.2	9.7	7.8	7.7	12.0	12.7
Queue Length 50th (ft)	51	60	62	71	55	15	60	24	14	115
Queue Length 95th (ft)	101	94	114	117	77	25	73	43	30	152
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	185	668	293	409	1615	482	2772	845	583	2698
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.30	0.37	0.42	0.22	0.33	0.31	0.15	0.17	0.38

Intersection Summary

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

exist SAT
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	85	195	170	170	235	120	155	845	205	100	920	75
Future Volume (veh/h)	85	195	170	170	235	120	155	845	205	100	920	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1897	1897	1885	1873	1873	1873
Adj Flow Rate, veh/h	87	199	108	173	240	122	158	862	130	102	939	77
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	1	1	1	1	1	1	2	2	2
Cap, veh/h	249	592	259	376	1058	484	628	2806	850	690	2587	212
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	1015	3554	1553	1795	3431	1571	1091	5179	1569	1100	4776	391
Grp Volume(v), veh/h	87	199	108	173	240	122	158	862	130	102	670	346
Grp Sat Flow(s),veh/h/ln	1015	1777	1553	1795	1716	1571	545	1726	1569	550	1705	1757
Q Serve(g_s), s	7.5	4.9	6.1	6.9	4.7	5.2	6.9	5.4	2.3	4.8	10.1	10.1
Cycle Q Clear(g_c), s	7.5	4.9	6.1	6.9	4.7	5.2	17.1	5.4	2.3	10.1	10.1	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	249	592	259	376	1058	484	628	2806	850	690	1847	952
V/C Ratio(X)	0.35	0.34	0.42	0.46	0.23	0.25	0.25	0.31	0.15	0.15	0.36	0.36
Avail Cap(c_a), veh/h	272	671	293	381	1144	524	628	2806	850	690	1847	952
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	37.7	38.3	25.7	23.2	23.3	10.8	6.5	6.1	13.3	11.8	11.8
Incr Delay (d2), s/veh	0.3	0.1	0.4	0.9	0.0	0.1	0.9	0.3	0.4	0.5	0.6	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(95%),veh/ln	3.6	3.9	4.3	5.3	3.4	3.5	1.3	3.1	1.4	1.1	6.5	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	37.9	38.7	26.6	23.2	23.4	11.7	6.8	6.4	13.8	12.3	12.8
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		394			535			1150			1118	
Approach Delay, s/veh		38.4			24.3			7.4			12.6	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.3		34.7		55.3	12.7	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.1		7.2		19.1	8.9	9.5				
Green Ext Time (p_c), s		7.4		1.2		9.5	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay				15.9								
HCM 6th LOS				B								

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

exist SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	380	95	120	855	965	295
Future Volume (vph)	380	95	120	855	965	295
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3467	1599	3473	5144	5085	1583
Fl _t Permitted	0.950		0.206			
Satd. Flow (perm)	3462	1576	753	5144	5085	1563
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						313
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Adj. Flow (vph)	413	64	130	929	1049	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	413	64	130	929	1049	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Queues
400: 27th Street & Loomis (STH 36)

exist SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	413	64	130	929	1049	321
v/c Ratio	0.68	0.23	0.18	0.27	0.38	0.33
Control Delay	40.6	33.1	5.8	6.1	13.8	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	33.1	5.8	6.1	13.8	5.3
Queue Length 50th (ft)	114	32	11	65	156	53
Queue Length 95th (ft)	156	65	22	94	208	111
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	731	332	815	3502	2727	983
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	0.56	0.19	0.16	0.27	0.38	0.33
Intersection Summary						

HCM 6th Signalized Intersection Summary

400: 27th Street & Loomis (STH 36)

exist SAT
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔↔	↑↑↑	↓↓↓	↔
Traffic Volume (veh/h)	380	95	120	855	965	295
Future Volume (veh/h)	380	95	120	855	965	295
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	1885	1885	1888	1888	1870	1870
Adj Flow Rate, veh/h	413	64	130	929	1049	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	516	236	828	3647	2891	
Arrive On Green	0.15	0.15	0.07	0.71	0.19	0.00
Sat Flow, veh/h	3483	1598	3489	5325	5274	1585
Grp Volume(v), veh/h	413	64	130	929	1049	0
Grp Sat Flow(s),veh/h/ln	1742	1598	1744	1718	1702	1585
Q Serve(g_s), s	10.3	3.2	1.2	5.8	16.1	0.0
Cycle Q Clear(g_c), s	10.3	3.2	1.2	5.8	16.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	516	236	828	3647	2891	
V/C Ratio(X)	0.80	0.27	0.16	0.25	0.36	
Avail Cap(c_a), veh/h	735	337	955	3647	2891	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.93	0.00
Uniform Delay (d), s/veh	37.1	34.0	7.4	4.7	22.4	0.0
Incr Delay (d2), s/veh	4.2	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.1	2.3	0.6	3.0	11.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.3	34.6	7.4	4.9	22.8	0.0
LnGrp LOS	D	C	A	A	C	
Approach Vol, veh/h	477			1059	1049	
Approach Delay, s/veh	40.4			5.2	22.8	
Approach LOS	D			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	57.0			69.7	20.3
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	18.1			7.8	12.3
Green Ext Time (p_c), s	0.1	7.8			7.8	1.0

Intersection Summary

HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

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

Appendix C
Build Traffic
Peak Hour Analysis Outputs

Build Traffic
Build (Sensitivity Analysis) Traffic

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Future Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.98	1.00	1.00	0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979		0.950	0.975	
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	0	1824	1583	1649	1692	1553
Flt Permitted	0.608			0.533				0.979		0.950	0.975	
Satd. Flow (perm)	1109	3471	1517	973	3471	1529	0	1822	1553	1643	1689	1531
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	56	275	17	230	230	157	17	22	79	107	34	14
Shared Lane Traffic (%)										35%		
Lane Group Flow (vph)	56	275	17	230	230	157	0	39	79	70	71	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023

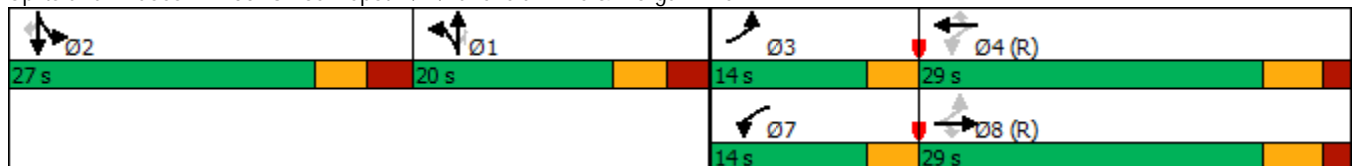


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	50.3	40.4	40.4	57.8	47.8	47.8		11.1	11.1	11.1	11.1	11.1
Actuated g/C Ratio	0.56	0.45	0.45	0.64	0.53	0.53		0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.08	0.18	0.02	0.32	0.12	0.19		0.17	0.41	0.34	0.34	0.07
Control Delay	10.5	19.9	21.9	9.5	14.6	16.4		36.6	42.9	40.6	40.4	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	19.9	21.9	9.5	14.6	16.4		36.6	42.9	40.6	40.4	34.9
LOS	B	B	C	A	B	B		D	D	D	D	C
Approach Delay		18.5			13.2			40.8			40.0	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 12 (13%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 20.7
 Intersection LOS: C
 Intersection Capacity Utilization 45.2%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	275	17	230	230	157	39	79	70	71	14
v/c Ratio	0.08	0.18	0.02	0.32	0.12	0.19	0.17	0.41	0.34	0.34	0.07
Control Delay	10.5	19.9	21.9	9.5	14.6	16.4	36.6	42.9	40.6	40.4	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	19.9	21.9	9.5	14.6	16.4	36.6	42.9	40.6	40.4	34.9
Queue Length 50th (ft)	12	52	6	35	37	50	21	43	40	40	7
Queue Length 95th (ft)	34	100	23	121	70	105	48	82	78	80	24
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	731	1558	681	730	1844	812	275	233	375	385	348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.18	0.02	0.32	0.12	0.19	0.14	0.34	0.19	0.18	0.04

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Future Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1735	3471	1519	1735	3471	1532		1823	1547	1649	1692	1526
Flt Permitted	0.61	1.00	1.00	0.53	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1111	3471	1519	974	3471	1532		1823	1547	1649	1692	1526
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	56	275	17	230	230	157	17	22	79	107	34	14
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	275	17	230	230	157	0	39	79	70	71	14
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	43.8	37.8	37.8	52.8	43.3	43.3		9.1	9.1	9.1	9.1	9.1
Effective Green, g (s)	43.8	37.8	37.8	52.8	43.3	43.3		9.1	9.1	9.1	9.1	9.1
Actuated g/C Ratio	0.49	0.42	0.42	0.59	0.48	0.48		0.10	0.10	0.10	0.10	0.10
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	582	1457	637	668	1669	737		184	156	166	171	154
v/s Ratio Prot	0.01	0.08		c0.04	0.07			0.02		c0.04	0.04	
v/s Ratio Perm	0.04		0.01	c0.16		0.10			c0.05			0.01
v/c Ratio	0.10	0.19	0.03	0.34	0.14	0.21		0.21	0.51	0.42	0.42	0.09
Uniform Delay, d1	12.3	16.4	15.3	8.9	13.0	13.5		37.2	38.3	38.0	38.0	36.7
Progression Factor	1.00	1.00	1.00	0.86	0.91	0.92		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.1	0.3	0.2	0.6		0.6	2.6	2.4	2.2	0.4
Delay (s)	12.3	16.7	15.4	8.0	12.0	13.0		37.7	40.9	40.3	40.2	37.0
Level of Service	B	B	B	A	B	B		D	D	D	D	D
Approach Delay (s)		16.0			10.8			39.9			40.0	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.39	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	45.2%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	410	1	0	550	0	95
Future Volume (vph)	410	1	0	550	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3471	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3471	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		2
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	1%	1%
Adj. Flow (vph)	427	1	0	573	0	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	573	0	99
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free		Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	410	1	0	550	0	95
Future Vol, veh/h	410	1	0	550	0	95
Conflicting Peds, #/hr	0	1	1	0	1	2
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	96	96	96	96	96	96
Heavy Vehicles, %	4	4	1	1	1	1
Mvmt Flow	427	1	0	573	0	99

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

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	789	-	-	-
HCM Lane V/C Ratio	0.125	-	-	-
HCM Control Delay (s)	10.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	185	195	205	265	150	180	760	190	125	870	105
Future Volume (vph)	125	185	195	205	265	150	180	760	190	125	870	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.98	1.00	1.00	
Frt			0.850		0.946				0.850		0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	4738	0	3388	5019	1553	3405	4954	0
Flt Permitted	0.491			0.506			0.244			0.328		
Satd. Flow (perm)	903	3505	1533	930	4738	0	869	5019	1527	1173	4954	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	3		6	6		3	7		7	7		7
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	130	193	126	214	276	156	188	792	123	130	906	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	193	126	214	432	0	188	792	123	130	1015	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build Midday
02/24/2023

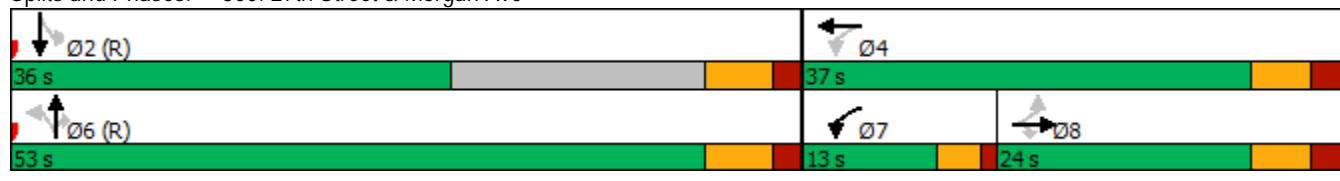


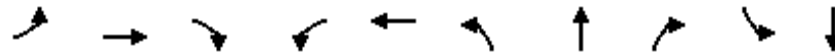
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.2	16.2	16.2	32.2	29.2		47.3	47.3	47.3	47.3	47.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.36	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.80	0.31	0.46	0.52	0.28		0.41	0.30	0.15	0.21	0.39	
Control Delay	73.3	36.1	41.5	26.1	23.0		11.9	8.3	8.1	12.8	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	73.3	36.1	41.5	26.1	23.0		11.9	8.3	8.1	12.8	13.4	
LOS	E	D	D	C	C		B	A	A	B	B	
Approach Delay	48.4				24.1		8.9				13.3	
Approach LOS	D				C		A				B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 18.7
 Intersection LOS: B
 Intersection Capacity Utilization 80.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	130	193	126	214	432	188	792	123	130	1015
v/c Ratio	0.80	0.31	0.46	0.52	0.28	0.41	0.30	0.15	0.21	0.39
Control Delay	73.3	36.1	41.5	26.1	23.0	11.9	8.3	8.1	12.8	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.3	36.1	41.5	26.1	23.0	11.9	8.3	8.1	12.8	13.4
Queue Length 50th (ft)	77	56	72	86	65	19	56	24	19	121
Queue Length 95th (ft)	#173	90	129	144	91	40	69	42	37	153
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	170	662	289	415	1579	456	2637	802	616	2603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.29	0.44	0.52	0.27	0.41	0.30	0.15	0.21	0.39

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	185	195	205	265	150	180	760	190	125	870	105
Future Volume (veh/h)	125	185	195	205	265	150	180	760	190	125	870	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1852	1852	1841	1858	1858	1858
Adj Flow Rate, veh/h	130	193	126	214	276	156	188	792	123	130	906	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	3	3
Cap, veh/h	237	588	256	376	1051	480	612	2725	827	793	2452	294
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	943	3526	1535	1767	3377	1544	1066	5057	1535	1174	4550	545
Grp Volume(v), veh/h	130	193	126	214	276	156	188	792	123	130	673	342
Grp Sat Flow(s),veh/h/ln	943	1763	1535	1767	1689	1544	533	1686	1535	587	1691	1713
Q Serve(g_s), s	12.3	4.7	7.2	8.8	5.5	7.0	5.0	0.0	0.0	5.2	10.3	10.4
Cycle Q Clear(g_c), s	12.3	4.7	7.2	8.8	5.5	7.0	15.4	0.0	0.0	5.2	10.3	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	237	588	256	376	1051	480	612	2725	827	793	1823	923
V/C Ratio(X)	0.55	0.33	0.49	0.57	0.26	0.32	0.31	0.29	0.15	0.16	0.37	0.37
Avail Cap(c_a), veh/h	258	666	290	376	1126	515	612	2725	827	793	1823	923
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	37.7	38.8	26.2	23.3	23.8	1.6	0.0	0.0	10.8	11.9	12.0
Incr Delay (d2), s/veh	0.8	0.1	0.5	2.0	0.0	0.1	1.2	0.3	0.4	0.4	0.6	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(95%),veh/ln	5.7	3.8	5.2	6.9	3.9	4.5	0.2	0.1	0.1	1.2	6.6	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	37.8	39.4	28.2	23.3	23.9	2.9	0.3	0.4	11.2	12.5	13.1
LnGrp LOS	D	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		449			646			1103			1145	
Approach Delay, s/veh		39.5			25.1			0.7			12.5	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.4		9.0		17.4	10.8	14.3				
Green Ext Time (p_c), s		7.5		1.4		9.5	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	340	85	120	820	935	335
Future Volume (vph)	340	85	120	820	935	335
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.98	1.00			0.98
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	3372	4995	5036	1568
Fl _t Permitted	0.950		0.230			
Satd. Flow (perm)	3423	1556	815	4995	5036	1543
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						349
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	2	3	12			5
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Adj. Flow (vph)	354	55	125	854	974	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	354	55	125	854	974	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Queues
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	354	55	125	854	974	349
v/c Ratio	0.63	0.22	0.16	0.25	0.35	0.35
Control Delay	40.0	33.8	5.3	5.6	13.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.8	5.3	5.6	13.0	4.9
Queue Length 50th (ft)	97	28	9	56	141	66
Queue Length 95th (ft)	136	59	21	84	196	115
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	724	328	847	3454	2755	1002
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	0.49	0.17	0.15	0.25	0.35	0.35
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖↗	↑↑↑	↑↑↑	↗
Traffic Volume (veh/h)	340	85	120	820	935	335
Future Volume (veh/h)	340	85	120	820	935	335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1844	1844	1856	1856
Adj Flow Rate, veh/h	354	55	125	854	974	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	3	3
Cap, veh/h	461	211	871	3635	2944	
Arrive On Green	0.13	0.13	0.07	0.72	0.19	0.00
Sat Flow, veh/h	3456	1585	3406	5199	5233	1572
Grp Volume(v), veh/h	354	55	125	854	974	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1703	1678	1689	1572
Q Serve(g_s), s	8.9	2.8	1.1	5.1	14.9	0.0
Cycle Q Clear(g_c), s	8.9	2.8	1.1	5.1	14.9	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	461	211	871	3635	2944	
V/C Ratio(X)	0.77	0.26	0.14	0.23	0.33	
Avail Cap(c_a), veh/h	730	335	997	3635	2944	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.91	0.00
Uniform Delay (d), s/veh	37.7	35.0	6.6	4.2	21.3	0.0
Incr Delay (d2), s/veh	2.7	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.9	2.0	0.6	2.5	10.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.4	35.7	6.7	4.3	21.5	0.0
LnGrp LOS	D	D	A	A	C	
Approach Vol, veh/h	409			979	974	
Approach Delay, s/veh	39.8			4.6	21.5	
Approach LOS	D			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	58.3			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	16.9			7.1	10.9
Green Ext Time (p_c), s	0.1	7.3			7.1	0.9

Intersection Summary

HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Future Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.98	1.00	1.00	0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950	0.965	
Satd. Flow (prot)	1752	3505	1568	1770	3539	1583	0	1840	1599	1698	1725	1599
Flt Permitted	0.531			0.495				0.978		0.950	0.965	
Satd. Flow (perm)	978	3505	1531	921	3539	1558	0	1834	1574	1696	1723	1570
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	54	344	20	183	371	215	22	27	75	194	32	37
Shared Lane Traffic (%)										42%		
Lane Group Flow (vph)	54	344	20	183	371	215	0	49	75	113	113	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023

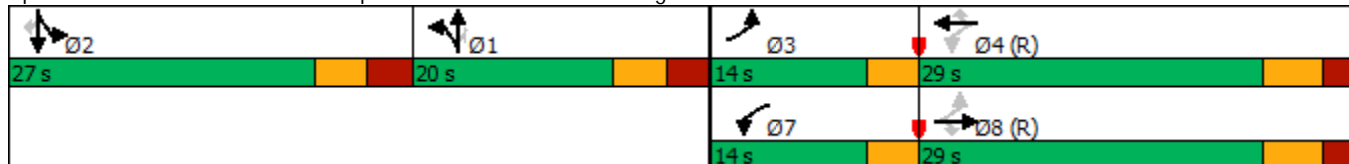


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	46.9	36.9	36.9	52.5	41.7	41.7		10.9	10.9	12.8	12.8	12.8
Actuated g/C Ratio	0.52	0.41	0.41	0.58	0.46	0.46		0.12	0.12	0.14	0.14	0.14
v/c Ratio	0.09	0.24	0.03	0.29	0.23	0.30		0.22	0.39	0.47	0.46	0.17
Control Delay	11.6	20.9	22.2	17.9	30.1	33.1		37.7	42.5	41.2	40.9	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	20.9	22.2	17.9	30.1	33.1		37.7	42.5	41.2	40.9	34.2
LOS	B	C	C	B	C	C		D	D	D	D	C
Approach Delay		19.8			28.0			40.6			40.1	
Approach LOS		B			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 7 (8%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 28.8
 Intersection LOS: C
 Intersection Capacity Utilization 45.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues

Build PM

100: Office Depot D/W/Lakefield Drive & Morgan Ave

02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	344	20	183	371	215	49	75	113	113	37
v/c Ratio	0.09	0.24	0.03	0.29	0.23	0.30	0.22	0.39	0.47	0.46	0.17
Control Delay	11.6	20.9	22.2	17.9	30.1	33.1	37.7	42.5	41.2	40.9	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	20.9	22.2	17.9	30.1	33.1	37.7	42.5	41.2	40.9	34.2
Queue Length 50th (ft)	13	67	7	53	96	110	26	41	63	63	19
Queue Length 95th (ft)	36	124	27	m116	147	m185	57	81	111	111	44
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	632	1437	628	649	1639	722	276	236	386	392	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.24	0.03	0.28	0.23	0.30	0.18	0.32	0.29	0.29	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Future Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1751	3505	1533	1769	3539	1560		1840	1571	1698	1725	1564
Flt Permitted	0.53	1.00	1.00	0.50	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	979	3505	1533	923	3539	1560		1840	1571	1698	1725	1564
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	54	344	20	183	371	215	22	27	75	194	32	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	344	20	183	371	215	0	49	75	113	113	37
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	41.7	35.7	35.7	49.3	39.8	39.8		8.9	8.9	12.8	12.8	12.8
Effective Green, g (s)	41.7	35.7	35.7	49.3	39.8	39.8		8.9	8.9	12.8	12.8	12.8
Actuated g/C Ratio	0.46	0.40	0.40	0.55	0.44	0.44		0.10	0.10	0.14	0.14	0.14
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	505	1390	608	600	1565	689		181	155	241	245	222
v/s Ratio Prot	0.01	0.10		c0.03	0.10			0.03		c0.07	0.07	
v/s Ratio Perm	0.04		0.01	0.13		c0.14			c0.05			0.02
v/c Ratio	0.11	0.25	0.03	0.30	0.24	0.31		0.27	0.48	0.47	0.46	0.17
Uniform Delay, d1	13.4	18.2	16.6	10.4	15.6	16.2		37.5	38.4	35.5	35.4	33.9
Progression Factor	1.00	1.00	1.00	1.55	1.67	1.64		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.1	0.3	0.3	1.1		0.8	2.4	2.0	1.9	0.5
Delay (s)	13.5	18.6	16.7	16.3	26.4	27.7		38.4	40.7	37.4	37.3	34.4
Level of Service	B	B	B	B	C	C		D	D	D	D	C
Approach Delay (s)		17.8			24.3			39.8			37.0	
Approach LOS		B			C			D			D	

Intersection Summary		
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.38	C
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	45.6%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

Build PM
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	570	1	0	715	0	80
Future Volume (vph)	570	1	0	715	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	633	1	0	794	0	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	634	0	0	794	0	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	570	1	0	715	0	80
Future Vol, veh/h	570	1	0	715	0	80
Conflicting Peds, #/hr	0	1	1	0	1	1
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	633	1	0	794	0	89

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	319
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	680
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	679
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	679	-	-	-
HCM Lane V/C Ratio	0.131	-	-	-
HCM Control Delay (s)	11.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	100	315	235	205	405	140	190	855	200	140	1185	120
Future Volume (vph)	100	315	235	205	405	140	190	855	200	140	1185	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	0.99		0.98	1.00	1.00		1.00		0.99	1.00	1.00	
Fr _t			0.850		0.961				0.850		0.986	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3438	1538	1770	4863	0	3421	5068	1568	3438	5013	0
Fl _t Permitted	0.428			0.421			0.149			0.288		
Satd. Flow (perm)	771	3438	1511	783	4863	0	536	5068	1546	1042	5013	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	7		3	3		7	13		3	3		13
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	104	328	152	214	422	146	198	891	129	146	1234	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	328	152	214	568	0	198	891	129	146	1359	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
02/24/2023

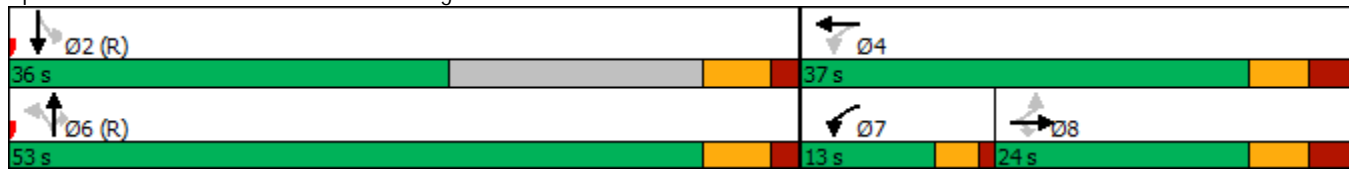


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.2	16.2	16.2	32.2	29.2		47.3	47.3	47.3	47.3	47.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.36	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.75	0.53	0.56	0.57	0.36		0.70	0.33	0.16	0.27	0.52	
Control Delay	64.6	33.4	38.7	27.6	23.9		27.5	8.8	8.5	13.7	14.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	64.6	33.4	38.7	27.6	23.9		27.5	8.8	8.5	13.7	14.9	
LOS	E	C	D	C	C		C	A	A	B	B	
Approach Delay					24.9		11.8				14.8	
Approach LOS					C		B				B	

Intersection Summary

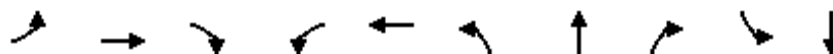
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 19.5 Intersection LOS: B
 Intersection Capacity Utilization 86.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	328	152	214	568	198	891	129	146	1359
v/c Ratio	0.75	0.53	0.56	0.57	0.36	0.70	0.33	0.16	0.27	0.52
Control Delay	64.6	33.4	38.7	27.6	23.9	27.5	8.8	8.5	13.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	33.4	38.7	27.6	23.9	27.5	8.8	8.5	13.7	14.9
Queue Length 50th (ft)	50	81	72	86	88	37	65	26	22	178
Queue Length 95th (ft)	#134	132	138	143	118	#107	80	45	43	217
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	145	649	285	378	1621	281	2663	812	547	2634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.51	0.53	0.57	0.35	0.70	0.33	0.16	0.27	0.52

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘	↑↑↑	↗	↘	↑↑↑	
Traffic Volume (veh/h)	100	315	235	205	405	140	190	855	200	140	1185	120
Future Volume (veh/h)	100	315	235	205	405	140	190	855	200	140	1185	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1867	1867	1856	1873	1873	1873
Adj Flow Rate, veh/h	104	328	152	214	422	146	198	891	129	146	1234	125
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	2	2	2
Cap, veh/h	216	578	251	326	1174	388	450	2747	831	668	2520	255
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	819	3469	1508	1781	3775	1246	775	5098	1542	1071	4675	474
Grp Volume(v), veh/h	104	328	152	214	379	189	198	891	129	146	900	459
Grp Sat Flow(s),veh/h/ln	819	1735	1508	1781	1702	1617	388	1699	1542	536	1705	1739
Q Serve(g_s), s	11.3	8.3	8.9	8.7	7.8	8.2	17.5	5.8	2.4	7.5	14.9	14.9
Cycle Q Clear(g_c), s	11.3	8.3	8.9	8.7	7.8	8.2	32.4	5.8	2.4	13.3	14.9	14.9
Prop In Lane	1.00		1.00	1.00		0.77	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	216	578	251	326	1059	503	450	2747	831	668	1837	937
V/C Ratio(X)	0.48	0.57	0.60	0.66	0.36	0.38	0.44	0.32	0.16	0.22	0.49	0.49
Avail Cap(c_a), veh/h	235	655	285	326	1135	539	450	2747	831	668	1837	937
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	39.4	39.6	26.6	24.0	24.2	16.1	6.7	6.2	14.4	13.0	13.0
Incr Delay (d2), s/veh	0.6	0.3	1.5	4.7	0.1	0.2	2.9	0.3	0.4	0.8	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	6.8	6.5	7.3	5.5	5.6	2.6	3.2	1.5	1.7	9.2	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	39.7	41.2	31.4	24.1	24.4	19.1	7.0	6.6	15.1	13.9	14.8
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		584			782			1218			1505	
Approach Delay, s/veh		40.4			26.2			8.9			14.3	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		16.9		10.2		34.4	10.7	13.3				
Green Ext Time (p_c), s		8.1		1.9		7.2	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↕↕↕	↕↕↕	↷
Traffic Volume (vph)	340	95	105	945	1180	445
Future Volume (vph)	340	95	105	945	1180	445
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3367	1553	3438	5093	5085	1583
Fl _t Permitted	0.950		0.169			
Satd. Flow (perm)	3362	1530	612	5093	5085	1560
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						387
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	4			4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	351	61	108	974	1216	459
Shared Lane Traffic (%)						
Lane Group Flow (vph)	351	61	108	974	1216	459
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Queues
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	351	61	108	974	1216	459
v/c Ratio	0.63	0.24	0.17	0.28	0.42	0.43
Control Delay	40.1	34.2	5.5	5.8	11.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	34.2	5.5	5.8	11.8	5.4
Queue Length 50th (ft)	97	31	8	66	188	110
Queue Length 95th (ft)	135	64	18	98	254	184
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	710	323	736	3516	2923	1061
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	0.49	0.19	0.15	0.28	0.42	0.43
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖	↙	↖↖	↑↑↑	↓↓↓	↘
Traffic Volume (veh/h)	340	95	105	945	1180	445
Future Volume (veh/h)	340	95	105	945	1180	445
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	1841	1841	1873	1873	1870	1870
Adj Flow Rate, veh/h	351	61	108	974	1216	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	2	2	2	2
Cap, veh/h	453	208	777	3694	2977	
Arrive On Green	0.13	0.13	0.07	0.72	0.39	0.00
Sat Flow, veh/h	3401	1560	3461	5283	5274	1585
Grp Volume(v), veh/h	351	61	108	974	1216	0
Grp Sat Flow(s),veh/h/ln	1700	1560	1731	1705	1702	1585
Q Serve(g_s), s	9.0	3.2	0.9	5.9	15.5	0.0
Cycle Q Clear(g_c), s	9.0	3.2	0.9	5.9	15.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	453	208	777	3694	2977	
V/C Ratio(X)	0.77	0.29	0.14	0.26	0.41	
Avail Cap(c_a), veh/h	718	329	910	3694	2977	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.84	0.00
Uniform Delay (d), s/veh	37.7	35.2	6.8	4.3	16.2	0.0
Incr Delay (d2), s/veh	2.9	0.8	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
%ile BackOfQ(95%),veh/ln	6.9	2.2	0.5	2.9	10.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.5	36.0	6.8	4.5	16.5	0.0
LnGrp LOS	D	D	A	A	B	
Approach Vol, veh/h				1082	1216	
Approach Delay, s/veh				4.7	16.5	
Approach LOS				A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	58.5			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	17.5			7.9	11.0
Green Ext Time (p_c), s	0.1	9.4			8.4	0.9

Intersection Summary

HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↗	↗	↘	↗	↗
Traffic Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Future Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		1.00	0.98	1.00	1.00	0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950	0.974	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1822	1583	1665	1707	1568
Flt Permitted	0.617			0.563				0.978		0.950	0.974	
Satd. Flow (perm)	1147	3539	1540	1046	3539	1558	0	1820	1559	1663	1706	1546
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	63	216	16	221	216	147	21	26	105	137	42	23
Shared Lane Traffic (%)										35%		
Lane Group Flow (vph)	63	216	16	221	216	147	0	47	105	89	90	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	216	16	221	216	147	47	105	89	90	23
v/c Ratio	0.09	0.14	0.02	0.30	0.12	0.19	0.19	0.50	0.40	0.40	0.11
Control Delay	11.8	20.6	22.8	9.0	14.5	16.2	35.5	44.3	40.8	40.5	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	20.6	22.8	9.0	14.5	16.2	35.5	44.3	40.8	40.5	34.3
Queue Length 50th (ft)	15	42	6	47	34	45	24	57	50	50	12
Queue Length 95th (ft)	42	81	23	112	69	107	53	103	92	93	33
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	740	1550	674	744	1801	792	283	241	379	388	352
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.14	0.02	0.30	0.12	0.19	0.17	0.44	0.23	0.23	0.07

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Future Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1768	3539	1545	1768	3539	1561		1822	1557	1665	1707	1542
Flt Permitted	0.62	1.00	1.00	0.56	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1148	3539	1545	1048	3539	1561		1822	1557	1665	1707	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	63	216	16	221	216	147	21	26	105	137	42	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	63	216	16	221	216	147	0	47	105	89	90	23
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	43.1	36.9	36.9	51.0	41.3	41.3		10.1	10.1	9.9	9.9	9.9
Effective Green, g (s)	43.1	36.9	36.9	51.0	41.3	41.3		10.1	10.1	9.9	9.9	9.9
Actuated g/C Ratio	0.48	0.41	0.41	0.57	0.46	0.46		0.11	0.11	0.11	0.11	0.11
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	592	1450	633	678	1624	716		204	174	183	187	169
v/s Ratio Prot	0.01	0.06		c0.04	0.06			0.03		c0.05	0.05	
v/s Ratio Perm	0.04		0.01	c0.15		0.09			c0.07			0.01
v/c Ratio	0.11	0.15	0.03	0.33	0.13	0.21		0.23	0.60	0.49	0.48	0.14
Uniform Delay, d1	12.7	16.7	15.8	9.7	14.0	14.5		36.4	38.0	37.7	37.6	36.2
Progression Factor	1.00	1.00	1.00	0.72	0.81	0.81		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.1	0.3	0.2	0.6		0.6	5.8	2.8	2.6	0.5
Delay (s)	12.8	16.9	15.9	7.3	11.5	12.4		37.0	43.8	40.4	40.3	36.7
Level of Service	B	B	B	A	B	B		D	D	D	D	D
Approach Delay (s)		16.0			10.2			41.7			39.9	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.41	C
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	46.7%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (vph)	435	1	0	555	0	105
Future Volume (vph)	435	1	0	555	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	489	1	0	624	0	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	490	0	0	624	0	118
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	435	1	0	555	0	105
Future Vol, veh/h	435	1	0	555	0	105
Conflicting Peds, #/hr	0	1	1	0	1	1
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	89	89	89	89	89	89
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	489	1	0	624	0	118

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 247
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.92
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.31
Pot Cap-1 Maneuver	-	- 0	- 0 756
Stage 1	-	- 0	- 0 -
Stage 2	-	- 0	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 755
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	755	-	-	-
HCM Lane V/C Ratio	0.156	-	-	-
HCM Control Delay (s)	10.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	125	200	215	170	245	120	195	825	205	100	900	115
Future Volume (vph)	125	200	215	170	245	120	195	825	205	100	900	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.99	1.00	1.00	
Fr _t			0.850		0.951				0.850		0.983	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1787	4858	0	3489	5168	1599	3438	4996	0
Fl _t Permitted	0.522			0.500			0.238			0.308		
Satd. Flow (perm)	969	3539	1555	939	4858	0	873	5168	1576	1114	4996	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	4		3	3		4	10		3	3		10
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	128	204	136	173	250	122	199	842	130	102	918	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	204	136	173	372	0	199	842	130	102	1035	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

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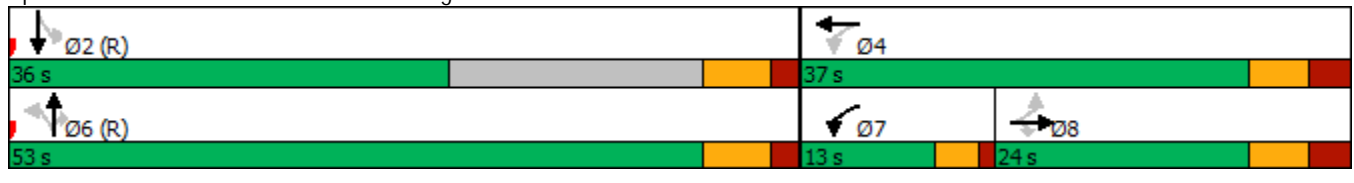


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.1	16.1	16.1	31.9	28.9		47.6	47.6	47.6	47.6	47.6	
Actuated g/C Ratio	0.18	0.18	0.18	0.35	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.74	0.32	0.49	0.42	0.24		0.43	0.31	0.16	0.17	0.39	
Control Delay	67.7	40.3	46.3	23.9	22.7		11.8	8.1	7.9	12.3	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.7	40.3	46.3	23.9	22.7		11.8	8.1	7.9	12.3	13.3	
LOS	E	D	D	C	C		B	A	A	B	B	
Approach Delay					23.1		8.7				13.2	
Approach LOS					C		A				B	

Intersection Summary

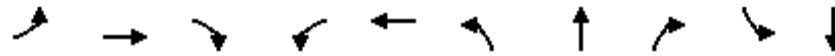
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	18.4
Intersection LOS:	B
Intersection Capacity Utilization:	80.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	128	204	136	173	372	199	842	130	102	1035
v/c Ratio	0.74	0.32	0.49	0.42	0.24	0.43	0.31	0.16	0.17	0.39
Control Delay	67.7	40.3	46.3	23.9	22.7	11.8	8.1	7.9	12.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	40.3	46.3	23.9	22.7	11.8	8.1	7.9	12.3	13.3
Queue Length 50th (ft)	76	60	78	69	56	19	58	25	14	122
Queue Length 95th (ft)	#159	96	137	117	79	40	72	43	29	156
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	183	668	293	417	1619	461	2732	833	588	2641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.31	0.46	0.41	0.23	0.43	0.31	0.16	0.17	0.39

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	200	215	170	245	120	195	825	205	100	900	115
Future Volume (veh/h)	125	200	215	170	245	120	195	825	205	100	900	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1897	1897	1885	1873	1873	1873
Adj Flow Rate, veh/h	128	204	136	173	250	122	199	842	130	102	918	117
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	1	1	1	1	1	1	2	2	2
Cap, veh/h	248	592	259	371	1069	475	616	2806	850	702	2466	313
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	1006	3554	1553	1795	3468	1541	1071	5179	1569	1121	4551	578
Grp Volume(v), veh/h	128	204	136	173	247	125	199	842	130	102	687	348
Grp Sat Flow(s),veh/h/ln	1006	1777	1553	1795	1716	1577	536	1726	1569	561	1705	1719
Q Serve(g_s), s	11.3	5.0	7.7	6.9	4.8	5.4	9.6	5.2	2.3	4.6	10.4	10.5
Cycle Q Clear(g_c), s	11.3	5.0	7.7	6.9	4.8	5.4	20.1	5.2	2.3	9.9	10.4	10.5
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	248	592	259	371	1058	486	616	2806	850	702	1847	932
V/C Ratio(X)	0.52	0.34	0.53	0.47	0.23	0.26	0.32	0.30	0.15	0.15	0.37	0.37
Avail Cap(c_a), veh/h	270	671	293	376	1144	526	616	2806	850	702	1847	932
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	37.8	39.1	25.7	23.2	23.4	11.6	6.5	6.1	13.2	11.8	11.8
Incr Delay (d2), s/veh	0.6	0.1	0.6	0.9	0.0	0.1	1.3	0.3	0.4	0.4	0.6	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(95%),veh/ln	5.5	4.0	5.6	5.3	3.5	3.5	1.8	3.0	1.4	1.1	6.7	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	37.9	39.7	26.6	23.2	23.5	12.9	6.7	6.4	13.6	12.4	13.0
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		468			545			1171			1137	
Approach Delay, s/veh		39.4			24.4			7.8			12.7	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.3		34.7		55.3	12.7	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.5		7.4		22.1	8.9	13.3				
Green Ext Time (p_c), s		7.4		1.2		9.5	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay				16.6								
HCM 6th LOS				B								

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↗	↖↗	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	385	95	120	870	985	300
Future Volume (vph)	385	95	120	870	985	300
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3467	1599	3473	5144	5085	1583
Fl _t Permitted	0.950		0.200			
Satd. Flow (perm)	3462	1576	731	5144	5085	1563
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						312
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Adj. Flow (vph)	418	64	130	946	1071	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	64	130	946	1071	326
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings

400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	15.8	15.8	61.2	61.2	48.2	48.2
Actuated g/C Ratio	0.18	0.18	0.68	0.68	0.54	0.54
v/c Ratio	0.69	0.23	0.18	0.27	0.39	0.33
Control Delay	40.7	33.0	5.8	6.1	14.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	33.0	5.8	6.1	14.2	5.0
LOS	D	C	A	A	B	A
Approach Delay	39.7			6.1	12.0	
Approach LOS	D			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 14.4
 Intersection LOS: B
 Intersection Capacity Utilization 51.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	418	64	130	946	1071	326
v/c Ratio	0.69	0.23	0.18	0.27	0.39	0.33
Control Delay	40.7	33.0	5.8	6.1	14.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	33.0	5.8	6.1	14.2	5.0
Queue Length 50th (ft)	115	32	11	68	162	54
Queue Length 95th (ft)	158	65	22	97	214	107
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	731	332	801	3498	2723	981
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	0.57	0.19	0.16	0.27	0.39	0.33
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖	↙	↖↖	↑↑↑	↓↓↓	↘
Traffic Volume (veh/h)	385	95	120	870	985	300
Future Volume (veh/h)	385	95	120	870	985	300
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	1885	1885	1888	1888	1870	1870
Adj Flow Rate, veh/h	418	64	130	946	1071	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	520	239	814	3640	2884	
Arrive On Green	0.15	0.15	0.07	0.71	0.19	0.00
Sat Flow, veh/h	3483	1598	3489	5325	5274	1585
Grp Volume(v), veh/h	418	64	130	946	1071	0
Grp Sat Flow(s),veh/h/ln	1742	1598	1744	1718	1702	1585
Q Serve(g_s), s	10.4	3.2	1.2	5.9	16.5	0.0
Cycle Q Clear(g_c), s	10.4	3.2	1.2	5.9	16.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	520	239	814	3640	2884	
V/C Ratio(X)	0.80	0.27	0.16	0.26	0.37	
Avail Cap(c_a), veh/h	735	337	941	3640	2884	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.92	0.00
Uniform Delay (d), s/veh	37.0	33.9	7.5	4.8	22.7	0.0
Incr Delay (d2), s/veh	4.4	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	2.2	0.7	3.1	11.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.4	34.5	7.6	4.9	23.0	0.0
LnGrp LOS	D	C	A	A	C	
Approach Vol, veh/h	482			1076	1071	
Approach Delay, s/veh	40.4			5.2	23.0	
Approach LOS	D			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	56.8			69.6	20.4
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	18.5			7.9	12.4
Green Ext Time (p_c), s	0.1	8.0			8.0	1.0

Intersection Summary

HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	25	200	205	140	15	20	65	95	30	20
Future Volume (vph)	50	245	25	200	205	140	15	20	65	95	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.98	1.00	1.00	0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979		0.950	0.975	
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	0	1824	1583	1649	1692	1553
Flt Permitted	0.608			0.534				0.979		0.950	0.975	
Satd. Flow (perm)	1109	3471	1517	975	3471	1529	0	1822	1553	1643	1689	1531
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25				25
Link Distance (ft)		921			213			410				879
Travel Time (s)		20.9			4.8			11.2				24.0
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	56	275	17	225	230	157	17	22	73	107	34	14
Shared Lane Traffic (%)										35%		
Lane Group Flow (vph)	56	275	17	225	230	157	0	39	73	70	71	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023

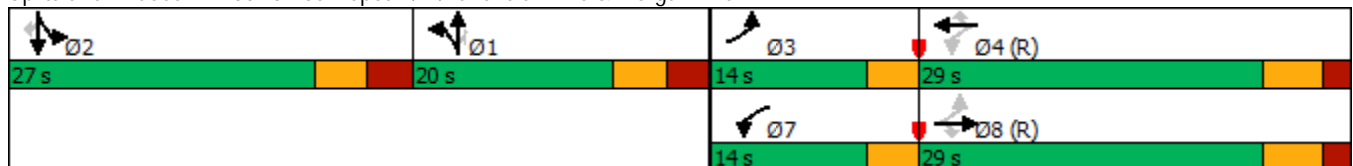


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	50.7	40.8	40.8	57.9	48.0	48.0		10.9	10.9	11.1	11.1	11.1
Actuated g/C Ratio	0.56	0.45	0.45	0.64	0.53	0.53		0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.08	0.17	0.02	0.31	0.12	0.19		0.18	0.39	0.34	0.34	0.07
Control Delay	10.3	19.5	21.4	9.3	14.5	16.3		37.0	42.5	40.6	40.4	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	19.5	21.4	9.3	14.5	16.3		37.0	42.5	40.6	40.4	34.9
LOS	B	B	C	A	B	B		D	D	D	D	C
Approach Delay		18.1			13.1			40.6				40.0
Approach LOS		B			B			D				D

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 12 (13%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 20.4
 Intersection LOS: C
 Intersection Capacity Utilization 44.9%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	275	17	225	230	157	39	73	70	71	14
v/c Ratio	0.08	0.17	0.02	0.31	0.12	0.19	0.18	0.39	0.34	0.34	0.07
Control Delay	10.3	19.5	21.4	9.3	14.5	16.3	37.0	42.5	40.6	40.4	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	19.5	21.4	9.3	14.5	16.3	37.0	42.5	40.6	40.4	34.9
Queue Length 50th (ft)	12	52	6	34	37	50	21	39	40	40	7
Queue Length 95th (ft)	33	98	23	117	69	104	48	78	78	80	24
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	736	1574	688	732	1852	816	273	232	375	385	348
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.17	0.02	0.31	0.12	0.19	0.14	0.31	0.19	0.18	0.04

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↘	↗	↘	↑↑	↗
Traffic Volume (vph)	50	245	25	200	205	140	15	20	65	95	30	20
Future Volume (vph)	50	245	25	200	205	140	15	20	65	95	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1735	3471	1519	1735	3471	1532		1823	1547	1649	1692	1526
Flt Permitted	0.61	1.00	1.00	0.53	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1111	3471	1519	975	3471	1532		1823	1547	1649	1692	1526
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	56	275	17	225	230	157	17	22	73	107	34	14
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	56	275	17	225	230	157	0	39	73	70	71	14
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	44.2	38.2	38.2	53.0	43.5	43.5		8.9	8.9	9.1	9.1	9.1
Effective Green, g (s)	44.2	38.2	38.2	53.0	43.5	43.5		8.9	8.9	9.1	9.1	9.1
Actuated g/C Ratio	0.49	0.42	0.42	0.59	0.48	0.48		0.10	0.10	0.10	0.10	0.10
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	587	1473	644	669	1677	740		180	152	166	171	154
v/s Ratio Prot	0.01	0.08		c0.04	0.07			0.02		c0.04	0.04	
v/s Ratio Perm	0.04		0.01	c0.16		0.10			c0.05			0.01
v/c Ratio	0.10	0.19	0.03	0.34	0.14	0.21		0.22	0.48	0.42	0.42	0.09
Uniform Delay, d1	12.0	16.2	15.1	8.8	12.9	13.4		37.3	38.4	38.0	38.0	36.7
Progression Factor	1.00	1.00	1.00	0.86	0.92	0.92		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.3	0.1	0.3	0.2	0.6		0.6	2.4	2.4	2.2	0.4
Delay (s)	12.1	16.5	15.2	7.9	12.0	13.0		37.9	40.7	40.3	40.2	37.0
Level of Service	B	B	B	A	B	B		D	D	D	D	D
Approach Delay (s)		15.7			10.7			39.8			40.0	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.38	B
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	44.9%	22.5
Analysis Period (min)	15	ICU Level of Service
		A

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	405	0	0	545	0	95
Future Volume (vph)	405	0	0	545	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3471	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3471	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		2
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	1%	1%
Adj. Flow (vph)	422	0	0	568	0	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	422	0	0	568	0	99
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free		Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	405	0	0	545	0	95
Future Vol, veh/h	405	0	0	545	0	95
Conflicting Peds, #/hr	0	1	1	0	1	2
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	96	96	96	96	96	96
Heavy Vehicles, %	4	4	1	1	1	1
Mvmt Flow	422	0	0	568	0	99

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 214
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.92
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.31
Pot Cap-1 Maneuver	-	- 0	- 0 794
Stage 1	-	- 0	- 0 -
Stage 2	-	- 0	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 792
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	792	-	-	-
HCM Lane V/C Ratio	0.125	-	-	-
HCM Control Delay (s)	10.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	185	190	205	265	150	175	760	190	125	870	105
Future Volume (vph)	125	185	190	205	265	150	175	760	190	125	870	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.98	1.00	1.00	
Frt			0.850		0.946				0.850		0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	4738	0	3388	5019	1553	3405	4954	0
Flt Permitted	0.491			0.506			0.244			0.328		
Satd. Flow (perm)	903	3505	1533	930	4738	0	869	5019	1527	1173	4954	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	3		6	6		3	7		7	7		7
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	130	193	123	214	276	156	182	792	123	130	906	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	193	123	214	432	0	182	792	123	130	1015	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

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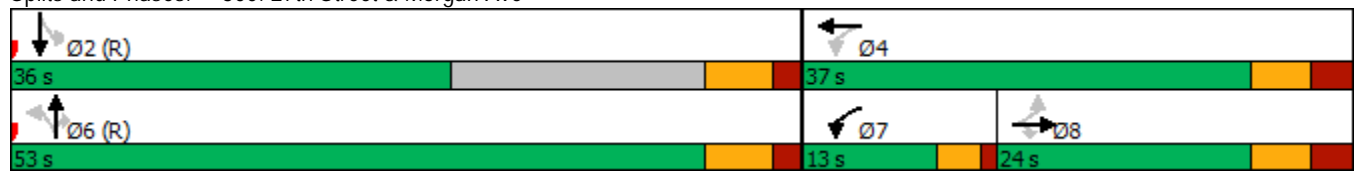


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.2	16.2	16.2	32.2	29.2		47.3	47.3	47.3	47.3	47.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.36	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.80	0.31	0.45	0.52	0.28		0.40	0.30	0.15	0.21	0.39	
Control Delay	73.4	36.1	41.2	26.1	23.0		11.7	8.4	8.2	12.8	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	73.4	36.1	41.2	26.1	23.0		11.7	8.4	8.2	12.8	13.4	
LOS	E	D	D	C	C		B	A	A	B	B	
Approach Delay	48.4				24.1		8.9			13.3		
Approach LOS	D				C		A			B		

Intersection Summary

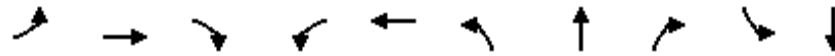
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	18.6
Intersection LOS:	B
Intersection Capacity Utilization:	80.0%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	130	193	123	214	432	182	792	123	130	1015
v/c Ratio	0.80	0.31	0.45	0.52	0.28	0.40	0.30	0.15	0.21	0.39
Control Delay	73.4	36.1	41.2	26.1	23.0	11.7	8.4	8.2	12.8	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.4	36.1	41.2	26.1	23.0	11.7	8.4	8.2	12.8	13.4
Queue Length 50th (ft)	77	56	69	86	65	18	56	24	19	121
Queue Length 95th (ft)	#174	91	127	144	91	37	69	42	37	153
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	170	662	289	415	1579	456	2637	802	616	2603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.29	0.43	0.52	0.27	0.40	0.30	0.15	0.21	0.39

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘	↑↑↑	↗	↘	↑↑↑	
Traffic Volume (veh/h)	125	185	190	205	265	150	175	760	190	125	870	105
Future Volume (veh/h)	125	185	190	205	265	150	175	760	190	125	870	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1852	1852	1841	1858	1858	1858
Adj Flow Rate, veh/h	130	193	123	214	276	156	182	792	123	130	906	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	3	3
Cap, veh/h	237	588	256	376	1051	480	612	2725	827	793	2452	294
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	943	3526	1535	1767	3377	1544	1066	5057	1535	1174	4550	545
Grp Volume(v), veh/h	130	193	123	214	276	156	182	792	123	130	673	342
Grp Sat Flow(s),veh/h/ln	943	1763	1535	1767	1689	1544	533	1686	1535	587	1691	1713
Q Serve(g_s), s	12.3	4.7	7.0	8.8	5.5	7.0	4.8	0.0	0.0	5.2	10.3	10.4
Cycle Q Clear(g_c), s	12.3	4.7	7.0	8.8	5.5	7.0	15.2	0.0	0.0	5.2	10.3	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	237	588	256	376	1051	480	612	2725	827	793	1823	923
V/C Ratio(X)	0.55	0.33	0.48	0.57	0.26	0.32	0.30	0.29	0.15	0.16	0.37	0.37
Avail Cap(c_a), veh/h	258	666	290	376	1126	515	612	2725	827	793	1823	923
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	37.7	38.7	26.2	23.3	23.8	1.6	0.0	0.0	10.8	11.9	12.0
Incr Delay (d2), s/veh	0.8	0.1	0.5	2.0	0.0	0.1	1.2	0.3	0.4	0.4	0.6	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(95%),veh/ln	5.7	3.8	5.0	6.9	3.9	4.5	0.2	0.1	0.1	1.2	6.6	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	37.8	39.3	28.2	23.3	23.9	2.8	0.3	0.4	11.2	12.5	13.1
LnGrp LOS	D	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		446			646			1097			1145	
Approach Delay, s/veh		39.4			25.1			0.7			12.5	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.4		9.0		17.2	10.8	14.3				
Green Ext Time (p_c), s		7.5		1.4		9.5	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↑↑↑	↖
Traffic Volume (vph)	335	85	120	820	935	330
Future Volume (vph)	335	85	120	820	935	330
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.98	1.00			0.98
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	3372	4995	5036	1568
Fl _t Permitted	0.950		0.231			
Satd. Flow (perm)	3423	1556	819	4995	5036	1543
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						344
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	2	3	12			5
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Adj. Flow (vph)	349	55	125	854	974	344
Shared Lane Traffic (%)						
Lane Group Flow (vph)	349	55	125	854	974	344
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.7	14.7	62.3	62.3	49.3	49.3
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.55	0.55
v/c Ratio	0.62	0.22	0.16	0.25	0.35	0.34
Control Delay	40.0	33.9	5.3	5.6	12.9	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.9	5.3	5.6	12.9	4.8
LOS	D	C	A	A	B	A
Approach Delay	39.2			5.5	10.8	
Approach LOS	D			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 13.1
 Intersection LOS: B
 Intersection Capacity Utilization 49.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	349	55	125	854	974	344
v/c Ratio	0.62	0.22	0.16	0.25	0.35	0.34
Control Delay	40.0	33.9	5.3	5.6	12.9	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.9	5.3	5.6	12.9	4.8
Queue Length 50th (ft)	96	28	9	56	140	65
Queue Length 95th (ft)	134	59	21	84	196	113
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	724	328	850	3460	2760	1001
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	0.48	0.17	0.15	0.25	0.35	0.34
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔↔	↑↑↑	↓↓↓	↔
Traffic Volume (veh/h)	335	85	120	820	935	330
Future Volume (veh/h)	335	85	120	820	935	330
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	1844	1844	1856	1856
Adj Flow Rate, veh/h	349	55	125	854	974	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	3	3
Cap, veh/h	461	211	871	3635	2944	
Arrive On Green	0.13	0.13	0.07	0.72	0.19	0.00
Sat Flow, veh/h	3456	1585	3406	5199	5233	1572
Grp Volume(v), veh/h	349	55	125	854	974	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1703	1678	1689	1572
Q Serve(g_s), s	8.8	2.8	1.1	5.1	14.9	0.0
Cycle Q Clear(g_c), s	8.8	2.8	1.1	5.1	14.9	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	461	211	871	3635	2944	
V/C Ratio(X)	0.76	0.26	0.14	0.23	0.33	
Avail Cap(c_a), veh/h	730	335	997	3635	2944	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.91	0.00
Uniform Delay (d), s/veh	37.6	35.0	6.6	4.2	21.3	0.0
Incr Delay (d2), s/veh	2.6	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	2.0	0.6	2.5	10.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.2	35.7	6.7	4.3	21.5	0.0
LnGrp LOS	D	D	A	A	C	
Approach Vol, veh/h	404			979	974	
Approach Delay, s/veh	39.6			4.6	21.5	
Approach LOS	D			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	58.3			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	16.9			7.1	10.8
Green Ext Time (p_c), s	0.1	7.3			7.1	0.9

Intersection Summary

HCM 6th Ctrl Delay		17.6	
HCM 6th LOS		B	

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	320	30	165	345	200	20	25	65	180	30	55
Future Volume (vph)	50	320	30	165	345	200	20	25	65	180	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.98	1.00	1.00	0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950	0.965	
Satd. Flow (prot)	1752	3505	1568	1770	3539	1583	0	1840	1599	1698	1725	1599
Flt Permitted	0.531			0.496				0.978		0.950	0.965	
Satd. Flow (perm)	978	3505	1531	923	3539	1558	0	1834	1574	1696	1723	1570
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	54	344	20	177	371	215	22	27	70	194	32	37
Shared Lane Traffic (%)										42%		
Lane Group Flow (vph)	54	344	20	177	371	215	0	49	70	113	113	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
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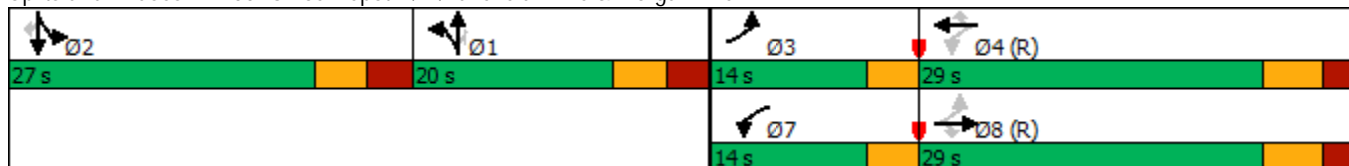


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	47.0	37.1	37.1	52.6	41.9	41.9		10.8	10.8	12.8	12.8	12.8
Actuated g/C Ratio	0.52	0.41	0.41	0.58	0.47	0.47		0.12	0.12	0.14	0.14	0.14
v/c Ratio	0.09	0.24	0.03	0.28	0.23	0.30		0.22	0.37	0.47	0.46	0.17
Control Delay	11.4	20.8	22.0	17.8	30.0	33.1		38.0	42.1	41.2	40.9	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	20.8	22.0	17.8	30.0	33.1		38.0	42.1	41.2	40.9	34.2
LOS	B	C	C	B	C	C		D	D	D	D	C
Approach Delay		19.7			28.0			40.4			40.1	
Approach LOS		B			C			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 7 (8%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 28.8
 Intersection LOS: C
 Intersection Capacity Utilization 45.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	344	20	177	371	215	49	70	113	113	37
v/c Ratio	0.09	0.24	0.03	0.28	0.23	0.30	0.22	0.37	0.47	0.46	0.17
Control Delay	11.4	20.8	22.0	17.8	30.0	33.1	38.0	42.1	41.2	40.9	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	20.8	22.0	17.8	30.0	33.1	38.0	42.1	41.2	40.9	34.2
Queue Length 50th (ft)	13	67	7	51	96	110	26	38	63	63	19
Queue Length 95th (ft)	36	124	27	m112	146	m186	58	76	111	111	44
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	634	1444	630	652	1646	724	276	236	386	392	357
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.24	0.03	0.27	0.23	0.30	0.18	0.30	0.29	0.29	0.10

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↘	↗	↘	↑↑	↗
Traffic Volume (vph)	50	320	30	165	345	200	20	25	65	180	30	55
Future Volume (vph)	50	320	30	165	345	200	20	25	65	180	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1751	3505	1533	1769	3539	1560		1840	1571	1698	1725	1564
Flt Permitted	0.53	1.00	1.00	0.50	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	979	3505	1533	923	3539	1560		1840	1571	1698	1725	1564
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	54	344	20	177	371	215	22	27	70	194	32	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	54	344	20	177	371	215	0	49	70	113	113	37
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	41.8	35.8	35.8	49.4	39.9	39.9		8.8	8.8	12.8	12.8	12.8
Effective Green, g (s)	41.8	35.8	35.8	49.4	39.9	39.9		8.8	8.8	12.8	12.8	12.8
Actuated g/C Ratio	0.46	0.40	0.40	0.55	0.44	0.44		0.10	0.10	0.14	0.14	0.14
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	506	1394	609	601	1568	691		179	153	241	245	222
v/s Ratio Prot	0.01	0.10		c0.03	0.10			0.03		c0.07	0.07	
v/s Ratio Perm	0.04		0.01	0.13		c0.14			c0.04			0.02
v/c Ratio	0.11	0.25	0.03	0.29	0.24	0.31		0.27	0.46	0.47	0.46	0.17
Uniform Delay, d1	13.3	18.1	16.5	10.3	15.6	16.2		37.6	38.3	35.5	35.4	33.9
Progression Factor	1.00	1.00	1.00	1.56	1.68	1.65		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.4	0.1	0.3	0.3	1.1		0.8	2.2	2.0	1.9	0.5
Delay (s)	13.4	18.5	16.6	16.3	26.5	27.8		38.5	40.5	37.4	37.3	34.4
Level of Service	B	B	B	B	C	C		D	D	D	D	C
Approach Delay (s)		17.8			24.5			39.7			37.0	
Approach LOS		B			C			D			D	

Intersection Summary

HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

Build PM
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	565	0	0	710	0	80
Future Volume (vph)	565	0	0	710	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	628	0	0	789	0	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	628	0	0	789	0	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free		Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	565	0	0	710	0	80
Future Vol, veh/h	565	0	0	710	0	80
Conflicting Peds, #/hr	0	1	1	0	1	1
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	628	0	0	789	0	89

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	316
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	0	683
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	682
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	682	-	-	-
HCM Lane V/C Ratio	0.13	-	-	-
HCM Control Delay (s)	11.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	100	315	230	205	405	140	185	855	200	140	1185	120
Future Volume (vph)	100	315	230	205	405	140	185	855	200	140	1185	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	0.99		0.98	1.00	1.00		1.00		0.99	1.00	1.00	
Frt			0.850		0.961				0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3438	1538	1770	4863	0	3421	5068	1568	3438	5013	0
Flt Permitted	0.428			0.421			0.149			0.288		
Satd. Flow (perm)	771	3438	1511	783	4863	0	536	5068	1546	1042	5013	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	7		3	3		7	13		3	3		13
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	104	328	149	214	422	146	193	891	129	146	1234	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	328	149	214	568	0	193	891	129	146	1359	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
02/24/2023

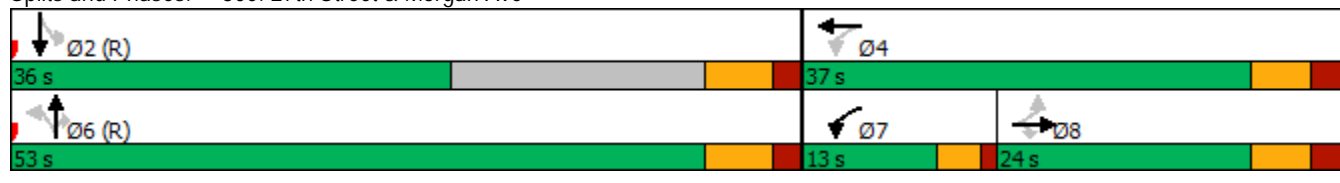


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8		7		4	6		6		2		
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.2	16.2	16.2	32.2	29.2		47.3	47.3	47.3	47.3	47.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.36	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.75	0.53	0.55	0.57	0.36		0.69	0.33	0.16	0.27	0.52	
Control Delay	64.7	33.6	38.3	27.6	23.9		26.3	8.9	8.5	13.7	14.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	64.7	33.6	38.3	27.6	23.9		26.3	8.9	8.5	13.7	14.9	
LOS	E	C	D	C	C		C	A	A	B	B	
Approach Delay	40.4			24.9			11.6			14.8		
Approach LOS	D			C			B			B		

Intersection Summary

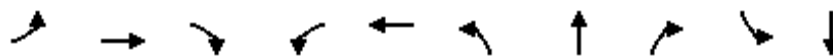
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 19.4 Intersection LOS: B
 Intersection Capacity Utilization 86.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	328	149	214	568	193	891	129	146	1359
v/c Ratio	0.75	0.53	0.55	0.57	0.36	0.69	0.33	0.16	0.27	0.52
Control Delay	64.7	33.6	38.3	27.6	23.9	26.3	8.9	8.5	13.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	33.6	38.3	27.6	23.9	26.3	8.9	8.5	13.7	14.9
Queue Length 50th (ft)	50	81	70	86	88	36	66	26	22	178
Queue Length 95th (ft)	#133	131	136	143	118	#103	80	45	43	217
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	145	649	285	378	1621	281	2663	812	547	2634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.51	0.52	0.57	0.35	0.69	0.33	0.16	0.27	0.52

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘	↑↑↑	↗	↘	↑↑↑	
Traffic Volume (veh/h)	100	315	230	205	405	140	185	855	200	140	1185	120
Future Volume (veh/h)	100	315	230	205	405	140	185	855	200	140	1185	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1867	1867	1856	1873	1873	1873
Adj Flow Rate, veh/h	104	328	149	214	422	146	193	891	129	146	1234	125
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	2	2	2
Cap, veh/h	216	578	251	326	1174	388	450	2747	831	668	2520	255
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	819	3469	1508	1781	3775	1246	775	5098	1542	1071	4675	474
Grp Volume(v), veh/h	104	328	149	214	379	189	193	891	129	146	900	459
Grp Sat Flow(s),veh/h/ln	819	1735	1508	1781	1702	1617	388	1699	1542	536	1705	1739
Q Serve(g_s), s	11.3	8.3	8.7	8.7	7.8	8.2	16.9	5.8	2.4	7.5	14.9	14.9
Cycle Q Clear(g_c), s	11.3	8.3	8.7	8.7	7.8	8.2	31.7	5.8	2.4	13.3	14.9	14.9
Prop In Lane	1.00		1.00	1.00		0.77	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	216	578	251	326	1059	503	450	2747	831	668	1837	937
V/C Ratio(X)	0.48	0.57	0.59	0.66	0.36	0.38	0.43	0.32	0.16	0.22	0.49	0.49
Avail Cap(c_a), veh/h	235	655	285	326	1135	539	450	2747	831	668	1837	937
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	39.4	39.5	26.6	24.0	24.2	16.0	6.7	6.2	14.4	13.0	13.0
Incr Delay (d2), s/veh	0.6	0.3	1.3	4.7	0.1	0.2	2.8	0.3	0.4	0.8	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	6.8	6.3	7.3	5.5	5.6	2.5	3.2	1.5	1.7	9.2	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	39.7	40.8	31.3	24.1	24.4	18.8	7.0	6.6	15.1	13.9	14.8
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		581			782			1213			1505	
Approach Delay, s/veh		40.3			26.1			8.8			14.3	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		16.9		10.2		33.7	10.7	13.3				
Green Ext Time (p_c), s		8.1		1.9		7.5	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	18.7
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↖	↖	↖↖	↑↑↑	↑↑↑	↖
Traffic Volume (vph)	335	95	105	945	1180	440
Future Volume (vph)	335	95	105	945	1180	440
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3367	1553	3438	5093	5085	1583
Fl _t Permitted	0.950		0.169			
Satd. Flow (perm)	3362	1530	612	5093	5085	1560
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						383
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	4			4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	345	61	108	974	1216	454
Shared Lane Traffic (%)						
Lane Group Flow (vph)	345	61	108	974	1216	454
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
 400: 27th Street & Loomis (STH 36)

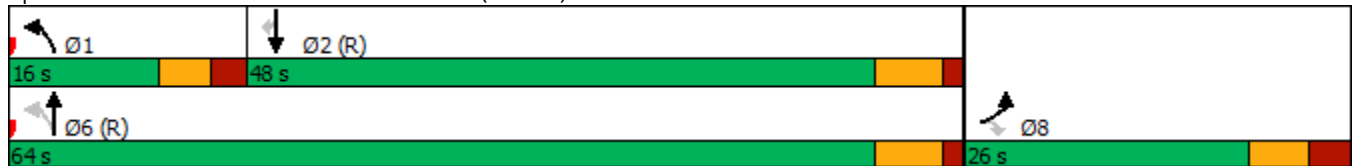


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.7	14.7	62.3	62.3	51.9	51.9
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.58	0.58
v/c Ratio	0.63	0.24	0.17	0.28	0.41	0.43
Control Delay	40.2	34.4	5.4	5.7	11.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	34.4	5.4	5.7	11.7	5.3
LOS	D	C	A	A	B	A
Approach Delay	39.3			5.7	9.9	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 12.3 Intersection LOS: B
 Intersection Capacity Utilization 54.5% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	345	61	108	974	1216	454
v/c Ratio	0.63	0.24	0.17	0.28	0.41	0.43
Control Delay	40.2	34.4	5.4	5.7	11.7	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	34.4	5.4	5.7	11.7	5.3
Queue Length 50th (ft)	95	31	8	65	188	109
Queue Length 95th (ft)	132	64	18	97	253	182
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	710	323	737	3525	2932	1061
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	0.49	0.19	0.15	0.28	0.41	0.43
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↶↶↶	↶↶↶	↷
Traffic Volume (veh/h)	335	95	105	945	1180	440
Future Volume (veh/h)	335	95	105	945	1180	440
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	1841	1841	1873	1873	1870	1870
Adj Flow Rate, veh/h	345	61	108	974	1216	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	2	2	2	2
Cap, veh/h	453	208	777	3694	2977	
Arrive On Green	0.13	0.13	0.07	0.72	0.39	0.00
Sat Flow, veh/h	3401	1560	3461	5283	5274	1585
Grp Volume(v), veh/h	345	61	108	974	1216	0
Grp Sat Flow(s),veh/h/ln	1700	1560	1731	1705	1702	1585
Q Serve(g_s), s	8.8	3.2	0.9	5.9	15.5	0.0
Cycle Q Clear(g_c), s	8.8	3.2	0.9	5.9	15.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	453	208	777	3694	2977	
V/C Ratio(X)	0.76	0.29	0.14	0.26	0.41	
Avail Cap(c_a), veh/h	718	329	910	3694	2977	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.84	0.00
Uniform Delay (d), s/veh	37.6	35.2	6.8	4.3	16.2	0.0
Incr Delay (d2), s/veh	2.7	0.8	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
%ile BackOfQ(95%),veh/ln	6.7	2.2	0.5	2.9	10.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.3	36.0	6.8	4.5	16.5	0.0
LnGrp LOS	D	D	A	A	B	
Approach Vol, veh/h	406			1082	1216	
Approach Delay, s/veh	39.6			4.7	16.5	
Approach LOS	D			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	58.5			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	17.5			7.9	10.8
Green Ext Time (p_c), s	0.1	9.4			8.4	0.9

Intersection Summary

HCM 6th Ctrl Delay			15.3			
HCM 6th LOS			B			

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	205	25	205	205	140	20	25	100	130	40	35
Future Volume (vph)	60	205	25	205	205	140	20	25	100	130	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		1.00	0.98	1.00	1.00	0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950	0.974	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1822	1583	1665	1707	1568
Flt Permitted	0.617			0.563				0.978		0.950	0.974	
Satd. Flow (perm)	1147	3539	1540	1046	3539	1558	0	1820	1559	1663	1706	1546
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	63	216	16	216	216	147	21	26	105	137	42	23
Shared Lane Traffic (%)										35%		
Lane Group Flow (vph)	63	216	16	216	216	147	0	47	105	89	90	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
02/24/2023

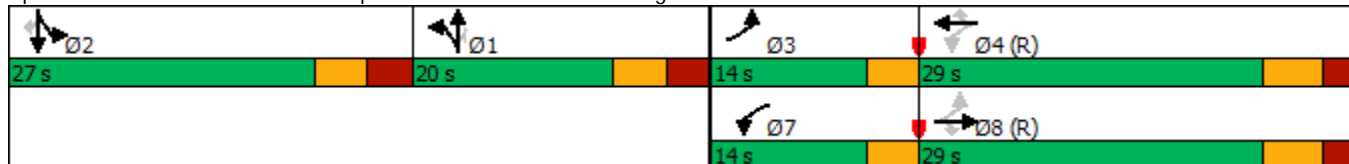


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Detector Phase	3	8	8	7	4	4	1	1	1	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	14.0	29.0	29.0	14.0	29.0	29.0	20.0	20.0	20.0	27.0	27.0	27.0
Total Split (%)	15.6%	32.2%	32.2%	15.6%	32.2%	32.2%	22.2%	22.2%	22.2%	30.0%	30.0%	30.0%
Maximum Green (s)	10.5	23.0	23.0	10.5	23.0	23.0	13.5	13.5	13.5	20.5	20.5	20.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	49.6	39.5	39.5	55.8	45.8	45.8		12.1	12.1	11.9	11.9	11.9
Actuated g/C Ratio	0.55	0.44	0.44	0.62	0.51	0.51		0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.09	0.14	0.02	0.29	0.12	0.19		0.19	0.50	0.40	0.40	0.11
Control Delay	11.8	20.5	22.7	8.9	14.5	16.2		35.5	44.3	40.8	40.5	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	20.5	22.7	8.9	14.5	16.2		35.5	44.3	40.8	40.5	34.3
LOS	B	C	C	A	B	B		D	D	D	D	C
Approach Delay		18.8			12.8			41.5			39.9	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 12 (13%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 22.3 Intersection LOS: C
 Intersection Capacity Utilization 46.4% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	216	16	216	216	147	47	105	89	90	23
v/c Ratio	0.09	0.14	0.02	0.29	0.12	0.19	0.19	0.50	0.40	0.40	0.11
Control Delay	11.8	20.5	22.7	8.9	14.5	16.2	35.5	44.3	40.8	40.5	34.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	20.5	22.7	8.9	14.5	16.2	35.5	44.3	40.8	40.5	34.3
Queue Length 50th (ft)	15	42	6	45	34	45	24	57	50	50	12
Queue Length 95th (ft)	42	81	23	110	69	107	53	103	92	93	33
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	742	1554	676	744	1801	792	283	241	379	388	352
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.14	0.02	0.29	0.12	0.19	0.17	0.44	0.23	0.23	0.07

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑	↗	↙	↑↑	↗		↙	↗	↙	↑↑	↗
Traffic Volume (vph)	60	205	25	205	205	140	20	25	100	130	40	35
Future Volume (vph)	60	205	25	205	205	140	20	25	100	130	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99		1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (prot)	1768	3539	1545	1768	3539	1561		1822	1557	1665	1707	1542
Flt Permitted	0.62	1.00	1.00	0.56	1.00	1.00		0.98	1.00	0.95	0.97	1.00
Satd. Flow (perm)	1148	3539	1545	1048	3539	1561		1822	1557	1665	1707	1542
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	100%	100%	62%	100%	100%	100%	100%	100%	100%	100%	100%	62%
Adj. Flow (vph)	63	216	16	216	216	147	21	26	105	137	42	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	63	216	16	216	216	147	0	47	105	89	90	23
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	3	8		7	4		1	1		2	2	
Permitted Phases	8		8	4		4			1			2
Actuated Green, G (s)	43.1	36.9	36.9	51.0	41.3	41.3		10.1	10.1	9.9	9.9	9.9
Effective Green, g (s)	43.1	36.9	36.9	51.0	41.3	41.3		10.1	10.1	9.9	9.9	9.9
Actuated g/C Ratio	0.48	0.41	0.41	0.57	0.46	0.46		0.11	0.11	0.11	0.11	0.11
Clearance Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	4.0	4.0	4.0
Lane Grp Cap (vph)	592	1450	633	678	1624	716		204	174	183	187	169
v/s Ratio Prot	0.01	0.06		c0.04	0.06			0.03		c0.05	0.05	
v/s Ratio Perm	0.04		0.01	c0.14		0.09			c0.07			0.01
v/c Ratio	0.11	0.15	0.03	0.32	0.13	0.21		0.23	0.60	0.49	0.48	0.14
Uniform Delay, d1	12.7	16.7	15.8	9.7	14.0	14.5		36.4	38.0	37.7	37.6	36.2
Progression Factor	1.00	1.00	1.00	0.72	0.81	0.81		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.2	0.1	0.3	0.2	0.6		0.6	5.8	2.8	2.6	0.5
Delay (s)	12.8	16.9	15.9	7.2	11.6	12.5		37.0	43.8	40.4	40.3	36.7
Level of Service	B	B	B	A	B	B		D	D	D	D	D
Approach Delay (s)		16.0			10.2			41.7			39.9	
Approach LOS		B			B			D			D	

Intersection Summary		
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.40	C
Actuated Cycle Length (s)	90.0	Sum of lost time (s)
Intersection Capacity Utilization	46.4%	ICU Level of Service
Analysis Period (min)	15	A

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (vph)	435	0	0	550	0	100
Future Volume (vph)	435	0	0	550	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	489	0	0	618	0	112
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	0	0	618	0	112
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	435	0	0	550	0	100
Future Vol, veh/h	435	0	0	550	0	100
Conflicting Peds, #/hr	0	1	1	0	1	1
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	89	89	89	89	89	89
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	489	0	0	618	0	112

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	-	-	247
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	756
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	755
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	755	-	-	-
HCM Lane V/C Ratio	0.149	-	-	-
HCM Control Delay (s)	10.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	125	200	210	170	245	120	190	825	205	100	900	115
Future Volume (vph)	125	200	210	170	245	120	190	825	205	100	900	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.99	1.00	1.00	
Fr _t			0.850		0.951				0.850		0.983	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1787	4858	0	3489	5168	1599	3438	4996	0
Fl _t Permitted	0.522			0.500			0.238			0.308		
Satd. Flow (perm)	969	3539	1555	939	4858	0	873	5168	1576	1114	4996	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	4		3	3		4	10		3	3		10
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	128	204	133	173	250	122	194	842	130	102	918	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	204	133	173	372	0	194	842	130	102	1035	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build SAT
02/24/2023

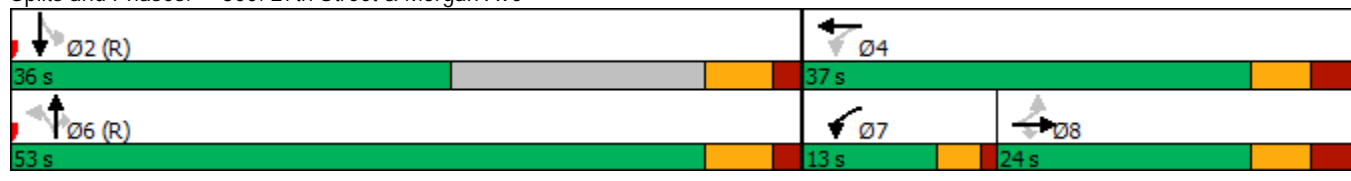


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8		7		4	6				2		
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.1	16.1	16.1	31.9	28.9		47.6	47.6	47.6	47.6	47.6	
Actuated g/C Ratio	0.18	0.18	0.18	0.35	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.74	0.32	0.48	0.42	0.24		0.42	0.31	0.16	0.17	0.39	
Control Delay	67.8	40.5	46.2	23.9	22.7		11.6	8.1	7.9	12.3	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	67.8	40.5	46.2	23.9	22.7		11.6	8.1	7.9	12.3	13.3	
LOS	E	D	D	C	C		B	A	A	B	B	
Approach Delay	49.6				23.1		8.7				13.2	
Approach LOS	D				C		A				B	

Intersection Summary

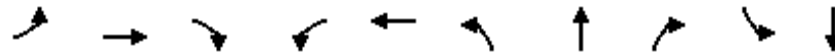
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 18.4
 Intersection LOS: B
 Intersection Capacity Utilization 80.9%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	128	204	133	173	372	194	842	130	102	1035
v/c Ratio	0.74	0.32	0.48	0.42	0.24	0.42	0.31	0.16	0.17	0.39
Control Delay	67.8	40.5	46.2	23.9	22.7	11.6	8.1	7.9	12.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.8	40.5	46.2	23.9	22.7	11.6	8.1	7.9	12.3	13.3
Queue Length 50th (ft)	75	60	76	69	56	19	58	25	14	122
Queue Length 95th (ft)	#162	96	136	117	79	39	72	43	29	156
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	183	668	293	417	1619	461	2732	833	588	2641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.31	0.45	0.41	0.23	0.42	0.31	0.16	0.17	0.39

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	200	210	170	245	120	190	825	205	100	900	115
Future Volume (veh/h)	125	200	210	170	245	120	190	825	205	100	900	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1897	1897	1885	1873	1873	1873
Adj Flow Rate, veh/h	128	204	133	173	250	122	194	842	130	102	918	117
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	1	1	1	1	1	1	2	2	2
Cap, veh/h	248	592	259	371	1069	475	616	2806	850	702	2466	313
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	0.72	0.72	0.72	0.54	0.54	0.54
Sat Flow, veh/h	1006	3554	1553	1795	3468	1541	1071	5179	1569	1121	4551	578
Grp Volume(v), veh/h	128	204	133	173	247	125	194	842	130	102	687	348
Grp Sat Flow(s),veh/h/ln	1006	1777	1553	1795	1716	1577	536	1726	1569	561	1705	1719
Q Serve(g_s), s	11.3	5.0	7.5	6.9	4.8	5.4	9.3	5.2	2.3	4.6	10.4	10.5
Cycle Q Clear(g_c), s	11.3	5.0	7.5	6.9	4.8	5.4	19.8	5.2	2.3	9.9	10.4	10.5
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	248	592	259	371	1058	486	616	2806	850	702	1847	932
V/C Ratio(X)	0.52	0.34	0.51	0.47	0.23	0.26	0.32	0.30	0.15	0.15	0.37	0.37
Avail Cap(c_a), veh/h	270	671	293	376	1144	526	616	2806	850	702	1847	932
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	37.8	39.0	25.7	23.2	23.4	11.5	6.5	6.1	13.2	11.8	11.8
Incr Delay (d2), s/veh	0.6	0.1	0.6	0.9	0.0	0.1	1.2	0.3	0.4	0.4	0.6	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(95%),veh/ln	5.5	4.0	5.5	5.3	3.5	3.5	1.7	3.0	1.4	1.1	6.7	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	37.9	39.6	26.6	23.2	23.5	12.8	6.7	6.4	13.6	12.4	13.0
LnGrp LOS	D	D	D	C	C	C	B	A	A	B	B	B
Approach Vol, veh/h		465			545			1166			1137	
Approach Delay, s/veh		39.3			24.4			7.7			12.7	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.3		34.7		55.3	12.7	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.5		7.4		21.8	8.9	13.3				
Green Ext Time (p_c), s		7.4		1.2		9.5	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	16.6
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	380	95	120	870	985	295
Future Volume (vph)	380	95	120	870	985	295
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3467	1599	3473	5144	5085	1583
Fl _t Permitted	0.950		0.200			
Satd. Flow (perm)	3462	1576	731	5144	5085	1563
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						307
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Adj. Flow (vph)	413	64	130	946	1071	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	413	64	130	946	1071	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Queues
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	413	64	130	946	1071	321
v/c Ratio	0.68	0.23	0.18	0.27	0.39	0.33
Control Delay	40.6	33.1	5.8	6.1	14.1	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	33.1	5.8	6.1	14.1	5.0
Queue Length 50th (ft)	114	32	11	67	162	53
Queue Length 95th (ft)	156	65	22	97	213	106
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	731	332	802	3502	2727	980
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	0.56	0.19	0.16	0.27	0.39	0.33
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↑↑↑	↑↑↑	↷
Traffic Volume (veh/h)	380	95	120	870	985	295
Future Volume (veh/h)	380	95	120	870	985	295
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	1885	1885	1888	1888	1870	1870
Adj Flow Rate, veh/h	413	64	130	946	1071	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	516	236	816	3647	2891	
Arrive On Green	0.15	0.15	0.07	0.71	0.19	0.00
Sat Flow, veh/h	3483	1598	3489	5325	5274	1585
Grp Volume(v), veh/h	413	64	130	946	1071	0
Grp Sat Flow(s),veh/h/ln	1742	1598	1744	1718	1702	1585
Q Serve(g_s), s	10.3	3.2	1.2	5.9	16.5	0.0
Cycle Q Clear(g_c), s	10.3	3.2	1.2	5.9	16.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	516	236	816	3647	2891	
V/C Ratio(X)	0.80	0.27	0.16	0.26	0.37	
Avail Cap(c_a), veh/h	735	337	943	3647	2891	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.92	0.00
Uniform Delay (d), s/veh	37.1	34.0	7.5	4.7	22.6	0.0
Incr Delay (d2), s/veh	4.2	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.1	2.3	0.6	3.0	11.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.3	34.6	7.5	4.9	22.9	0.0
LnGrp LOS	D	C	A	A	C	
Approach Vol, veh/h	477			1076	1071	
Approach Delay, s/veh	40.4			5.2	22.9	
Approach LOS	D			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	57.0			69.7	20.3
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	18.5			7.9	12.3
Green Ext Time (p_c), s	0.1	8.0			8.0	1.0

Intersection Summary

HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Notes

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

Appendix D
Improvement
Peak Hour Analysis Outputs

Build Traffic - With Modifications

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Future Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99		1.00	0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979		0.950		
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	0	1824	1583	1736	1827	1553
Flt Permitted	0.608			0.583				0.853		0.732		
Satd. Flow (perm)	1110	3471	1518	1064	3471	1531	0	1588	1558	1333	1827	1531
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	56	275	17	230	230	98	17	22	79	107	34	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	275	17	230	230	98	0	39	79	107	34	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
02/24/2023

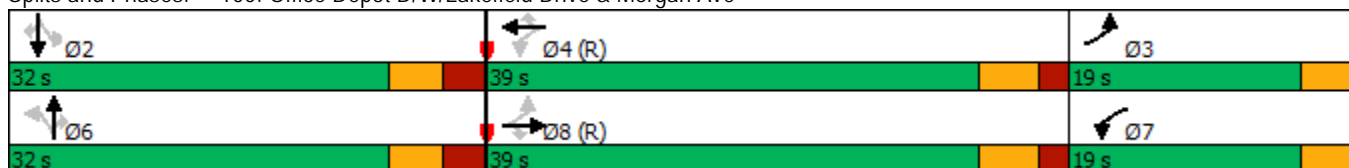


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	3	8		7	4			6				2
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	19.0	39.0	39.0	19.0	39.0	39.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	21.1%	43.3%	43.3%	21.1%	43.3%	43.3%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	15.5	33.0	33.0	15.5	33.0	33.0	25.5	25.5	25.5	25.5	25.5	25.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	65.9	56.4	56.4	66.6	59.7	59.7		13.9	13.9	13.9	13.9	13.9
Actuated g/C Ratio	0.73	0.63	0.63	0.74	0.66	0.66		0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.07	0.13	0.02	0.27	0.10	0.10		0.16	0.33	0.52	0.12	0.06
Control Delay	4.4	8.5	9.1	3.5	5.1	5.8		32.9	36.5	43.5	32.0	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	8.5	9.1	3.5	5.1	5.8		32.9	36.5	43.5	32.0	30.8
LOS	A	A	A	A	A	A		C	D	D	C	C
Approach Delay		7.9			4.6			35.3				39.9
Approach LOS		A			A			D				D

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 68 (76%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 13.3 Intersection LOS: B
 Intersection Capacity Utilization 47.0% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	275	17	230	230	98	39	79	107	34	14
v/c Ratio	0.07	0.13	0.02	0.27	0.10	0.10	0.16	0.33	0.52	0.12	0.06
Control Delay	4.4	8.5	9.1	3.5	5.1	5.8	32.9	36.5	43.5	32.0	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	8.5	9.1	3.5	5.1	5.8	32.9	36.5	43.5	32.0	30.8
Queue Length 50th (ft)	7	33	4	13	11	9	20	41	57	17	7
Queue Length 95th (ft)	20	59	14	19	28	32	45	76	101	40	22
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	1013	2176	952	992	2304	1016	449	441	377	517	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.13	0.02	0.23	0.10	0.10	0.09	0.18	0.28	0.07	0.03

Intersection Summary

HCM 6th Signalized Intersection Summary
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	245	25	205	205	140	15	20	70	95	30	20
Future Volume (veh/h)	50	245	25	205	205	140	15	20	70	95	30	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	56	275	17	230	230	98	17	22	79	107	34	14
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, %	4	4	4	4	4	4	2	2	2	4	4	4
Cap, veh/h	1033	1282	558	985	1282	564	129	144	202	221	239	199
Arrive On Green	0.33	0.37	0.37	0.54	0.61	0.61	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1753	3497	1523	1753	3497	1538	549	1110	1553	1266	1841	1528
Grp Volume(v), veh/h	56	275	17	230	230	98	39	0	79	107	34	14
Grp Sat Flow(s),veh/h/ln	1753	1749	1523	1753	1749	1538	1658	0	1553	1266	1841	1528
Q Serve(g_s), s	0.0	4.9	0.6	0.0	2.6	2.5	0.0	0.0	4.2	7.4	1.5	0.7
Cycle Q Clear(g_c), s	0.0	4.9	0.6	0.0	2.6	2.5	1.7	0.0	4.2	9.1	1.5	0.7
Prop In Lane	1.00		1.00	1.00		1.00	0.44		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1033	1282	558	985	1282	564	273	0	202	221	239	199
V/C Ratio(X)	0.05	0.21	0.03	0.23	0.18	0.17	0.14	0.00	0.39	0.48	0.14	0.07
Avail Cap(c_a), veh/h	1033	1282	558	985	1282	564	518	0	440	415	522	433
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.4	19.6	18.3	4.7	11.5	11.5	34.8	0.0	35.9	38.8	34.7	34.4
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.1	0.3	0.7	0.2	0.0	1.2	2.3	0.4	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(95%),veh/ln	0.6	3.6	0.4	2.1	1.8	1.6	1.4	0.0	2.9	4.4	1.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	20.0	18.4	4.8	11.9	12.2	35.0	0.0	37.1	41.1	35.1	34.6
LnGrp LOS	A	B	B	A	B	B	D	A	D	D	D	C
Approach Vol, veh/h		348			558			118			155	
Approach Delay, s/veh		17.5			9.0			36.4			39.2	
Approach LOS		B			A			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	32.8	39.0		18.2	32.8	39.0				
Change Period (Y+Rc), s		6.5	3.5	6.0		6.5	3.5	6.0				
Max Green Setting (Gmax), s		25.5	15.5	33.0		25.5	15.5	33.0				
Max Q Clear Time (g_c+I1), s		11.1	2.0	4.6		6.2	2.0	6.9				
Green Ext Time (p_c), s		0.7	0.1	1.8		0.4	0.5	1.9				
Intersection Summary												
HCM 6th Ctrl Delay				18.2								
HCM 6th LOS				B								



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	410	1	0	550	0	95
Future Volume (vph)	410	1	0	550	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3471	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3471	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		2
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	1%	1%
Adj. Flow (vph)	427	1	0	573	0	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	573	0	99
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	410	1	0	550	0	95
Future Vol, veh/h	410	1	0	550	0	95
Conflicting Peds, #/hr	0	1	1	0	1	2
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	96	96	96	96	96	96
Heavy Vehicles, %	4	4	1	1	1	1
Mvmt Flow	427	1	0	573	0	99

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	-	-	217
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	0	-	0	791
Stage 1	-	0	-	0	-
Stage 2	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	789
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	789	-	-	-
HCM Lane V/C Ratio	0.125	-	-	-
HCM Control Delay (s)	10.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	185	195	205	265	150	180	760	190	125	870	105
Future Volume (vph)	125	185	195	205	265	150	180	760	190	125	870	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.98	1.00	1.00	
Frt			0.850		0.946				0.850		0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	4738	0	3388	5019	1553	3405	4954	0
Flt Permitted	0.491			0.506			0.244			0.328		
Satd. Flow (perm)	903	3505	1533	930	4738	0	869	5019	1527	1173	4954	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	3		6	6		3	7		7	7		7
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	130	193	126	214	276	156	188	792	123	130	906	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	193	126	214	432	0	188	792	123	130	1015	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build Midday
02/24/2023

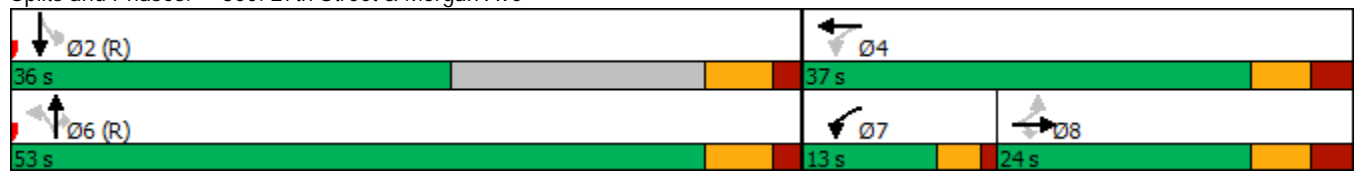


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8			7	4		6				2	
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.2	16.2	16.2	32.2	29.2		47.3	47.3	47.3	47.3	47.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.36	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.80	0.31	0.46	0.52	0.28		0.41	0.30	0.15	0.21	0.39	
Control Delay	61.2	24.0	28.9	26.1	23.0		14.4	10.2	9.7	12.8	13.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	61.2	24.0	28.9	26.1	23.0		14.4	10.2	9.7	12.8	13.4	
LOS	E	C	C	C	C		B	B	A	B	B	
Approach Delay	36.1			24.1			10.9			13.3		
Approach LOS	D			C			B			B		

Intersection Summary

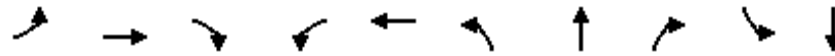
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	76 (84%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	17.7
Intersection LOS:	B
Intersection Capacity Utilization:	80.0%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	130	193	126	214	432	188	792	123	130	1015
v/c Ratio	0.80	0.31	0.46	0.52	0.28	0.41	0.30	0.15	0.21	0.39
Control Delay	61.2	24.0	28.9	26.1	23.0	14.4	10.2	9.7	12.8	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.2	24.0	28.9	26.1	23.0	14.4	10.2	9.7	12.8	13.4
Queue Length 50th (ft)	58	44	56	86	65	28	85	36	19	121
Queue Length 95th (ft)	#149	68	97	144	91	45	104	62	37	153
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	170	662	289	415	1579	456	2637	802	616	2603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.29	0.44	0.52	0.27	0.41	0.30	0.15	0.21	0.39

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build Midday
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	185	195	205	265	150	180	760	190	125	870	105
Future Volume (veh/h)	125	185	195	205	265	150	180	760	190	125	870	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1852	1852	1841	1858	1858	1858
Adj Flow Rate, veh/h	130	193	126	214	276	156	188	792	123	130	906	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	3	3
Cap, veh/h	237	588	256	376	1051	480	612	2725	827	793	2452	294
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	943	3526	1535	1767	3377	1544	1066	5057	1535	1174	4550	545
Grp Volume(v), veh/h	130	193	126	214	276	156	188	792	123	130	673	342
Grp Sat Flow(s),veh/h/ln	943	1763	1535	1767	1689	1544	533	1686	1535	587	1691	1713
Q Serve(g_s), s	12.3	4.7	7.2	8.8	5.5	7.0	5.0	0.0	0.0	5.2	10.3	10.4
Cycle Q Clear(g_c), s	12.3	4.7	7.2	8.8	5.5	7.0	15.4	0.0	0.0	5.2	10.3	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	237	588	256	376	1051	480	612	2725	827	793	1823	923
V/C Ratio(X)	0.55	0.33	0.49	0.57	0.26	0.32	0.31	0.29	0.15	0.16	0.37	0.37
Avail Cap(c_a), veh/h	258	666	290	376	1126	515	612	2725	827	793	1823	923
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	37.7	38.8	26.2	23.3	23.8	1.6	0.0	0.0	10.8	11.9	12.0
Incr Delay (d2), s/veh	0.8	0.1	0.5	2.0	0.0	0.1	1.2	0.3	0.4	0.4	0.6	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(95%),veh/ln	5.7	3.8	5.2	6.9	3.9	4.5	0.2	0.1	0.1	1.2	6.6	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	37.8	39.4	28.2	23.3	23.9	2.9	0.3	0.4	11.2	12.5	13.1
LnGrp LOS	D	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		449			646			1103			1145	
Approach Delay, s/veh		39.5			25.1			0.7			12.5	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.4		9.0		17.4	10.8	14.3				
Green Ext Time (p_c), s		7.5		1.4		9.5	0.0	0.4				

Intersection Summary

HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	340	85	120	820	935	335
Future Volume (vph)	340	85	120	820	935	335
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.98	1.00			0.98
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	3372	4995	5036	1568
Fl _t Permitted	0.950		0.230			
Satd. Flow (perm)	3423	1556	815	4995	5036	1543
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						349
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	2	3	12			5
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Adj. Flow (vph)	354	55	125	854	974	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	354	55	125	854	974	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

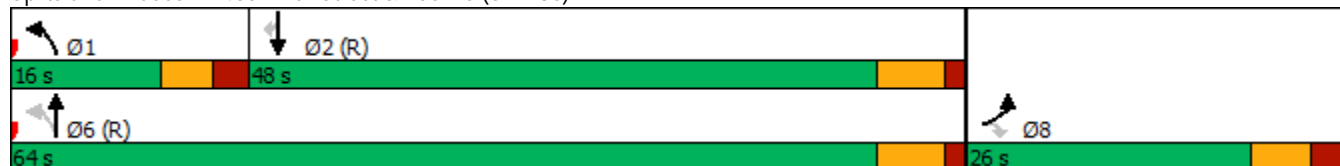


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.8	14.8	62.2	62.2	49.2	49.2
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.55	0.55
v/c Ratio	0.63	0.22	0.16	0.25	0.35	0.35
Control Delay	40.0	33.8	5.3	5.6	8.0	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.8	5.3	5.6	8.0	1.5
LOS	D	C	A	A	A	A
Approach Delay	39.2			5.6	6.3	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 75 (83%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 11.0
 Intersection LOS: B
 Intersection Capacity Utilization 49.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	354	55	125	854	974	349
v/c Ratio	0.63	0.22	0.16	0.25	0.35	0.35
Control Delay	40.0	33.8	5.3	5.6	8.0	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.8	5.3	5.6	8.0	1.5
Queue Length 50th (ft)	97	28	9	56	65	2
Queue Length 95th (ft)	136	59	21	84	79	9
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)	130		150		100	
Base Capacity (vph)	724	328	847	3454	2755	1002
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	0.49	0.17	0.15	0.25	0.35	0.35

Intersection Summary

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build Midday
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↶↶↶	↶↶↶	↷
Traffic Volume (veh/h)	340	85	120	820	935	335
Future Volume (veh/h)	340	85	120	820	935	335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1844	1844	1856	1856
Adj Flow Rate, veh/h	354	55	125	854	974	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	3	3
Cap, veh/h	461	211	906	3635	2944	
Arrive On Green	0.13	0.13	0.07	0.72	0.39	0.00
Sat Flow, veh/h	3456	1585	3406	5199	5233	1572
Grp Volume(v), veh/h	354	55	125	854	974	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1703	1678	1689	1572
Q Serve(g_s), s	8.9	2.8	1.1	5.1	12.1	0.0
Cycle Q Clear(g_c), s	8.9	2.8	1.1	5.1	12.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	461	211	906	3635	2944	
V/C Ratio(X)	0.77	0.26	0.14	0.23	0.33	
Avail Cap(c_a), veh/h	730	335	1031	3635	2944	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.91	0.00
Uniform Delay (d), s/veh	37.7	35.0	6.1	4.2	15.2	0.0
Incr Delay (d2), s/veh	2.7	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.9	2.0	0.6	2.5	8.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.4	35.7	6.1	4.3	15.5	0.0
LnGrp LOS	D	D	A	A	B	
Approach Vol, veh/h	409			979	974	
Approach Delay, s/veh	39.8			4.6	15.5	
Approach LOS	D			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	58.3			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	14.1			7.1	10.9
Green Ext Time (p_c), s	0.1	7.6			7.1	0.9

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Future Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.99	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950		
Satd. Flow (prot)	1752	3505	1568	1770	3539	1583	0	1840	1599	1787	1881	1599
Flt Permitted	0.531			0.545				0.875		0.725		
Satd. Flow (perm)	978	3505	1532	1015	3539	1558	0	1644	1578	1363	1881	1574
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25				25
Link Distance (ft)		921			213			410				879
Travel Time (s)		20.9			4.8			11.2				24.0
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	54	344	20	183	371	133	22	27	75	194	32	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	344	20	183	371	133	0	49	75	194	32	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023

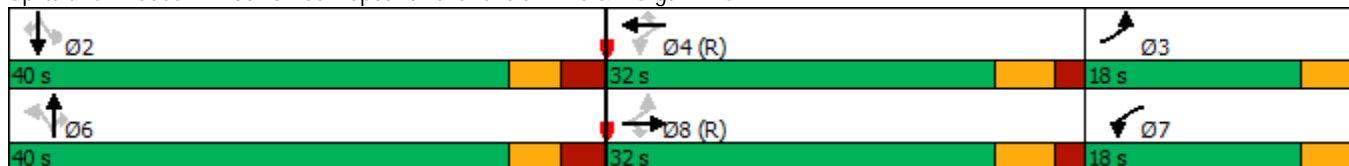


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	3	8		7	4			6			2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	18.0	32.0	32.0	18.0	32.0	32.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	20.0%	35.6%	35.6%	20.0%	35.6%	35.6%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%
Maximum Green (s)	14.5	26.0	26.0	14.5	26.0	26.0	33.5	33.5	33.5	33.5	33.5	33.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	57.3	47.8	47.8	58.0	49.9	49.9		19.2	19.2	19.2	19.2	19.2
Actuated g/C Ratio	0.64	0.53	0.53	0.64	0.55	0.55		0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.08	0.18	0.02	0.26	0.19	0.15		0.14	0.22	0.67	0.08	0.11
Control Delay	7.0	12.4	12.6	6.4	10.8	11.8		27.0	28.6	42.9	25.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	12.4	12.6	6.4	10.8	11.8		27.0	28.6	42.9	25.8	26.5
LOS	A	B	B	A	B	B		C	C	D	C	C
Approach Delay		11.7			9.8			28.0			38.5	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 61 (68%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 16.9
 Intersection LOS: B
 Intersection Capacity Utilization 49.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	344	20	183	371	133	49	75	194	32	37
v/c Ratio	0.08	0.18	0.02	0.26	0.19	0.15	0.14	0.22	0.67	0.08	0.11
Control Delay	7.0	12.4	12.6	6.4	10.8	11.8	27.0	28.6	42.9	25.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	12.4	12.6	6.4	10.8	11.8	27.0	28.6	42.9	25.8	26.5
Queue Length 50th (ft)	9	50	5	20	44	30	23	36	102	15	17
Queue Length 95th (ft)	27	90	19	m44	74	m57	47	65	155	34	38
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	828	1860	813	860	1961	863	611	587	507	700	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.18	0.02	0.21	0.19	0.15	0.08	0.13	0.38	0.05	0.06

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	320	30	170	345	200	20	25	70	180	30	55
Future Volume (veh/h)	50	320	30	170	345	200	20	25	70	180	30	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	54	344	20	183	371	133	22	27	75	194	32	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	899	1018	442	886	1027	451	183	204	316	314	381	316
Arrive On Green	0.33	0.29	0.29	0.66	0.58	0.58	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1767	3526	1531	1781	3554	1560	618	1012	1567	1296	1885	1567
Grp Volume(v), veh/h	54	344	20	183	371	133	49	0	75	194	32	37
Grp Sat Flow(s),veh/h/ln	1767	1763	1531	1781	1777	1560	1631	0	1567	1296	1885	1567
Q Serve(g_s), s	0.0	6.9	0.8	0.0	5.0	3.9	0.0	0.0	3.6	13.0	1.2	1.7
Cycle Q Clear(g_c), s	0.0	6.9	0.8	0.0	5.0	3.9	1.9	0.0	3.6	14.9	1.2	1.7
Prop In Lane	1.00		1.00	1.00		1.00	0.45		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	899	1018	442	886	1027	451	387	0	316	314	381	316
V/C Ratio(X)	0.06	0.34	0.05	0.21	0.36	0.30	0.13	0.00	0.24	0.62	0.08	0.12
Avail Cap(c_a), veh/h	899	1018	442	886	1027	451	658	0	583	535	702	583
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	25.2	23.1	5.2	14.6	14.3	29.4	0.0	30.1	35.5	29.2	29.4
Incr Delay (d2), s/veh	0.0	0.9	0.2	0.1	1.0	1.7	0.1	0.0	0.4	2.8	0.1	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(95%),veh/ln	0.8	5.3	0.6	1.6	3.4	2.6	1.6	0.0	2.5	7.7	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	26.1	23.2	5.3	15.6	16.0	29.6	0.0	30.5	38.3	29.3	29.6
LnGrp LOS	A	C	C	A	B	B	C	A	C	D	C	C
Approach Vol, veh/h		418			687			124			263	
Approach Delay, s/veh		23.8			12.9			30.1			36.0	
Approach LOS		C			B			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.7	33.3	32.0		24.7	33.3	32.0				
Change Period (Y+Rc), s		6.5	3.5	6.0		6.5	3.5	6.0				
Max Green Setting (Gmax), s		33.5	14.5	26.0		33.5	14.5	26.0				
Max Q Clear Time (g_c+I1), s		16.9	2.0	7.0		5.6	2.0	8.9				
Green Ext Time (p_c), s		1.3	0.1	2.8		0.5	0.4	2.1				
Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

Build PM
02/24/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	570	1	0	715	0	80
Future Volume (vph)	570	1	0	715	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	633	1	0	794	0	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	634	0	0	794	0	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	570	1	0	715	0	80
Future Vol, veh/h	570	1	0	715	0	80
Conflicting Peds, #/hr	0	1	1	0	1	1
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	633	1	0	794	0	89

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	319
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	680
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	679
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	679	-	-	-
HCM Lane V/C Ratio	0.131	-	-	-
HCM Control Delay (s)	11.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	315	235	205	405	140	190	855	200	140	1185	120
Future Volume (vph)	100	315	235	205	405	140	190	855	200	140	1185	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	0.99		0.98	1.00	1.00		1.00		0.99	1.00	1.00	
Frt			0.850		0.961				0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3438	1538	1770	4863	0	3421	5068	1568	3438	5013	0
Flt Permitted	0.428			0.421			0.149			0.288		
Satd. Flow (perm)	771	3438	1511	783	4863	0	536	5068	1546	1042	5013	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	7		3	3		7	13		3	3		13
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	104	328	152	214	422	146	198	891	129	146	1234	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	328	152	214	568	0	198	891	129	146	1359	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
02/24/2023

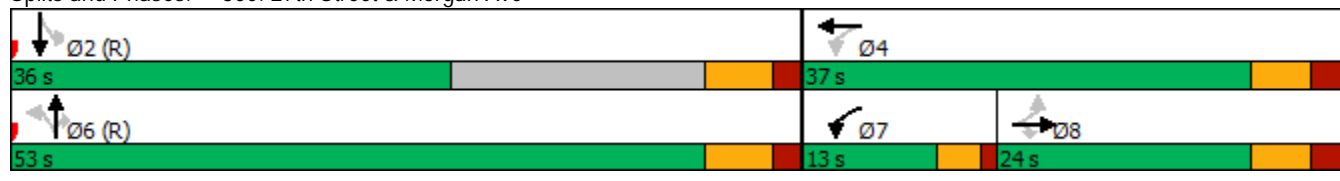


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8		7		4	6				2		
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.2	16.2	16.2	32.2	29.2		47.3	47.3	47.3	47.3	47.3	
Actuated g/C Ratio	0.18	0.18	0.18	0.36	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.75	0.53	0.56	0.57	0.36		0.70	0.33	0.16	0.27	0.52	
Control Delay	59.3	27.5	32.6	27.6	23.9		30.9	10.2	9.6	13.7	14.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	59.3	27.5	32.6	27.6	23.9		30.9	10.2	9.6	13.7	14.9	
LOS	E	C	C	C	C		C	B	A	B	B	
Approach Delay	34.5			24.9			13.5			14.8		
Approach LOS	C			C			B			B		

Intersection Summary

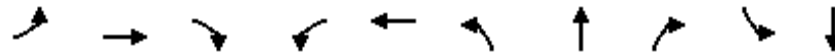
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 19.2 Intersection LOS: B
 Intersection Capacity Utilization 86.5% ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	328	152	214	568	198	891	129	146	1359
v/c Ratio	0.75	0.53	0.56	0.57	0.36	0.70	0.33	0.16	0.27	0.52
Control Delay	59.3	27.5	32.6	27.6	23.9	30.9	10.2	9.6	13.7	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	27.5	32.6	27.6	23.9	30.9	10.2	9.6	13.7	14.9
Queue Length 50th (ft)	60	71	63	86	88	50	91	36	22	178
Queue Length 95th (ft)	#131	101	105	143	118	#107	110	61	43	217
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	145	649	285	378	1621	281	2663	812	547	2634
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.51	0.53	0.57	0.35	0.70	0.33	0.16	0.27	0.52

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build PM
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘	↑↑↑	↗	↘	↑↑↑	
Traffic Volume (veh/h)	100	315	235	205	405	140	190	855	200	140	1185	120
Future Volume (veh/h)	100	315	235	205	405	140	190	855	200	140	1185	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1867	1867	1856	1873	1873	1873
Adj Flow Rate, veh/h	104	328	152	214	422	146	198	891	129	146	1234	125
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	2	2	2
Cap, veh/h	216	578	251	326	1174	388	450	2747	831	737	2520	255
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	819	3469	1508	1781	3775	1246	775	5098	1542	1071	4675	474
Grp Volume(v), veh/h	104	328	152	214	379	189	198	891	129	146	900	459
Grp Sat Flow(s),veh/h/ln	819	1735	1508	1781	1702	1617	388	1699	1542	536	1705	1739
Q Serve(g_s), s	11.3	8.3	8.9	8.7	7.8	8.2	13.4	0.0	0.0	6.6	14.9	14.9
Cycle Q Clear(g_c), s	11.3	8.3	8.9	8.7	7.8	8.2	28.3	0.0	0.0	6.6	14.9	14.9
Prop In Lane	1.00		1.00	1.00		0.77	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	216	578	251	326	1059	503	450	2747	831	737	1837	937
V/C Ratio(X)	0.48	0.57	0.60	0.66	0.36	0.38	0.44	0.32	0.16	0.20	0.49	0.49
Avail Cap(c_a), veh/h	235	655	285	326	1135	539	450	2747	831	737	1837	937
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	39.4	39.6	26.6	24.0	24.2	4.3	0.0	0.0	11.1	13.0	13.0
Incr Delay (d2), s/veh	0.6	0.3	1.5	4.7	0.1	0.2	2.9	0.3	0.4	0.6	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	6.8	6.5	7.3	5.5	5.6	1.0	0.1	0.2	1.4	9.2	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	39.7	41.2	31.4	24.1	24.4	7.3	0.3	0.4	11.7	13.9	14.8
LnGrp LOS	D	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		584			782			1218			1505	
Approach Delay, s/veh		40.4			26.2			1.4			14.0	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0		35.0		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		16.9		10.2		30.3	10.7	13.3				
Green Ext Time (p_c), s		8.1		1.9		8.8	0.0	0.7				

Intersection Summary

HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	340	95	105	945	1180	445
Future Volume (vph)	340	95	105	945	1180	445
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3367	1553	3438	5093	5085	1583
Fl _t Permitted	0.950		0.169			
Satd. Flow (perm)	3362	1530	612	5093	5085	1560
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						387
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	4			4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	351	61	108	974	1216	459
Shared Lane Traffic (%)						
Lane Group Flow (vph)	351	61	108	974	1216	459
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.9	14.9	62.1	62.1	51.7	51.7
Actuated g/C Ratio	0.17	0.17	0.69	0.69	0.57	0.57
v/c Ratio	0.63	0.24	0.17	0.28	0.42	0.43
Control Delay	40.1	34.2	5.5	5.8	6.5	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	34.2	5.5	5.8	6.5	1.5
LOS	D	C	A	A	A	A
Approach Delay	39.2			5.8	5.1	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 72 (80%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 54.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	351	61	108	974	1216	459
v/c Ratio	0.63	0.24	0.17	0.28	0.42	0.43
Control Delay	40.1	34.2	5.5	5.8	6.5	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	34.2	5.5	5.8	6.5	1.5
Queue Length 50th (ft)	97	31	8	66	69	2
Queue Length 95th (ft)	135	64	18	98	82	9
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	710	323	736	3516	2923	1061
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	0.49	0.19	0.15	0.28	0.42	0.43
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build PM
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↑↑↑	↓↓↓	↷
Traffic Volume (veh/h)	340	95	105	945	1180	445
Future Volume (veh/h)	340	95	105	945	1180	445
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	1841	1841	1873	1873	1870	1870
Adj Flow Rate, veh/h	351	61	108	974	1216	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	2	2	2	2
Cap, veh/h	453	208	931	3694	2977	
Arrive On Green	0.13	0.13	0.07	0.72	1.00	0.00
Sat Flow, veh/h	3401	1560	3461	5283	5274	1585
Grp Volume(v), veh/h	351	61	108	974	1216	0
Grp Sat Flow(s),veh/h/ln	1700	1560	1731	1705	1702	1585
Q Serve(g_s), s	9.0	3.2	0.9	5.9	0.0	0.0
Cycle Q Clear(g_c), s	9.0	3.2	0.9	5.9	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	453	208	931	3694	2977	
V/C Ratio(X)	0.77	0.29	0.12	0.26	0.41	
Avail Cap(c_a), veh/h	718	329	1064	3694	2977	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.84	0.00
Uniform Delay (d), s/veh	37.7	35.2	4.8	4.3	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.8	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
%ile BackOfQ(95%),veh/ln	6.9	2.2	0.5	2.9	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.5	36.0	4.9	4.5	0.4	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h				1082	1216	
Approach Delay, s/veh				4.5	0.4	
Approach LOS				A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	58.5			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	2.0			7.9	11.0
Green Ext Time (p_c), s	0.1	11.1			8.4	0.9

Intersection Summary

HCM 6th Ctrl Delay			8.0			
HCM 6th LOS			A			

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
 02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Future Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		1.00	0.99	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1822	1583	1752	1845	1568
Flt Permitted	0.617			0.617				0.861		0.726		
Satd. Flow (perm)	1148	3539	1543	1147	3539	1559	0	1603	1562	1338	1845	1547
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	63	216	16	221	216	91	21	26	105	137	42	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	216	16	221	216	91	0	47	105	137	42	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	216	16	221	216	91	47	105	137	42	23
v/c Ratio	0.08	0.11	0.02	0.27	0.10	0.10	0.17	0.38	0.59	0.13	0.09
Control Delay	5.3	10.0	10.4	4.4	7.6	8.6	30.8	35.5	43.5	29.9	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	10.0	10.4	4.4	7.6	8.6	30.8	35.5	43.5	29.9	29.2
Queue Length 50th (ft)	9	27	4	16	15	12	23	54	73	21	11
Queue Length 95th (ft)	26	53	15	88	50	55	48	93	121	44	29
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	990	2014	878	998	2097	923	507	494	423	584	489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.02	0.22	0.10	0.10	0.09	0.21	0.32	0.07	0.05

Intersection Summary

HCM 6th Signalized Intersection Summary
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
 02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	205	25	210	205	140	20	25	100	130	40	35
Future Volume (veh/h)	60	205	25	210	205	140	20	25	100	130	40	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	1856	1856	1856
Adj Flow Rate, veh/h	63	216	16	221	216	91	21	26	105	137	42	23
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	3	3	3
Cap, veh/h	1018	1185	515	997	1185	520	152	168	251	253	298	249
Arrive On Green	0.33	0.33	0.33	0.55	0.56	0.56	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1545	1781	3554	1561	589	1045	1561	1247	1856	1549
Grp Volume(v), veh/h	63	216	16	221	216	91	47	0	105	137	42	23
Grp Sat Flow(s),veh/h/ln	1781	1777	1545	1781	1777	1561	1634	0	1561	1247	1856	1549
Q Serve(g_s), s	0.0	3.9	0.6	0.0	2.7	2.6	0.0	0.0	5.4	9.6	1.7	1.1
Cycle Q Clear(g_c), s	0.0	3.9	0.6	0.0	2.7	2.6	1.9	0.0	5.4	11.5	1.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	0.45		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1018	1185	515	997	1185	520	320	0	251	253	298	249
V/C Ratio(X)	0.06	0.18	0.03	0.22	0.18	0.17	0.15	0.00	0.42	0.54	0.14	0.09
Avail Cap(c_a), veh/h	1018	1185	515	997	1185	520	568	0	494	448	588	490
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.5	21.3	20.2	5.1	13.9	13.9	32.5	0.0	34.0	37.5	32.4	32.2
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.1	0.3	0.7	0.2	0.0	1.1	2.5	0.3	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(95%),veh/ln	0.8	3.0	0.4	2.1	2.0	1.8	1.6	0.0	3.8	5.5	1.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	21.6	20.3	5.2	14.2	14.6	32.7	0.0	35.1	40.0	32.8	32.4
LnGrp LOS	A	C	C	A	B	B	C	A	D	D	C	C
Approach Vol, veh/h		295			528			152			202	
Approach Delay, s/veh		18.3			10.5			34.4			37.7	
Approach LOS		B			B			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	33.1	36.0		20.9	33.1	36.0				
Change Period (Y+Rc), s		6.5	3.5	6.0		6.5	3.5	6.0				
Max Green Setting (Gmax), s		28.5	15.5	30.0		28.5	15.5	30.0				
Max Q Clear Time (g_c+I1), s		13.5	2.0	4.7		7.4	2.0	5.9				
Green Ext Time (p_c), s		0.9	0.1	1.7		0.5	0.5	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			20.2									
HCM 6th LOS			C									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (vph)	435	1	0	555	0	105
Future Volume (vph)	435	1	0	555	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	489	1	0	624	0	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	490	0	0	624	0	118
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	435	1	0	555	0	105
Future Vol, veh/h	435	1	0	555	0	105
Conflicting Peds, #/hr	0	1	1	0	1	1
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	89	89	89	89	89	89
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	489	1	0	624	0	118

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 247
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.92
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.31
Pot Cap-1 Maneuver	-	- 0	- 0 756
Stage 1	-	- 0	- 0 -
Stage 2	-	- 0	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 755
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	755	-	-	-
HCM Lane V/C Ratio	0.156	-	-	-
HCM Control Delay (s)	10.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (vph)	125	200	215	170	245	120	195	825	205	100	900	115
Future Volume (vph)	125	200	215	170	245	120	195	825	205	100	900	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.99	1.00	1.00	
Fr _t			0.850		0.951				0.850		0.983	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1787	4858	0	3489	5168	1599	3438	4996	0
Fl _t Permitted	0.522			0.500			0.238			0.308		
Satd. Flow (perm)	969	3539	1555	939	4858	0	873	5168	1576	1114	4996	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	4		3	3		4	10		3	3		10
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	128	204	136	173	250	122	199	842	130	102	918	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	204	136	173	372	0	199	842	130	102	1035	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build SAT
02/24/2023

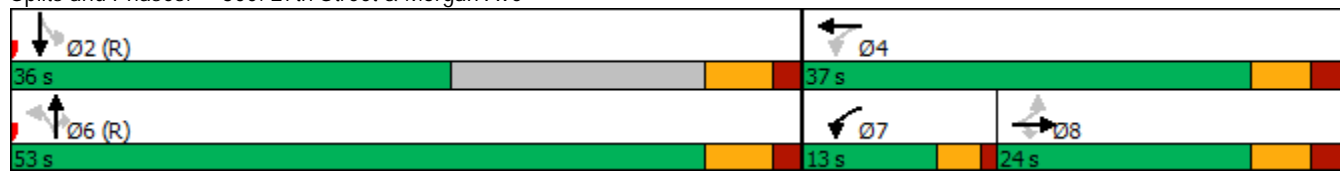


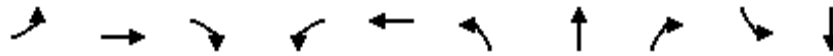
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	8		7		4	6				2		
Permitted Phases	8		8	4			6		6	2		
Detector Phase	8	8	8	7	4		6	6	6	2	2	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	7.0	19.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	23.0	23.0	23.0	11.0	26.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	24.0	24.0	24.0	13.0	37.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	26.7%	26.7%	26.7%	14.4%	41.1%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	17.0	17.0	17.0	9.0	30.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	3.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	1.5	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	16.1	16.1	16.1	31.9	28.9		47.6	47.6	47.6	47.6	47.6	
Actuated g/C Ratio	0.18	0.18	0.18	0.35	0.32		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.74	0.32	0.49	0.42	0.24		0.43	0.31	0.16	0.17	0.39	
Control Delay	51.6	23.8	29.6	23.9	22.7		14.8	10.2	9.7	12.3	13.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	51.6	23.8	29.6	23.9	22.7		14.8	10.2	9.7	12.3	13.3	
LOS	D	C	C	C	C		B	B	A	B	B	
Approach Delay	33.1			23.1			10.9			13.2		
Approach LOS	C			C			B			B		

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 60 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 16.8 Intersection LOS: B
 Intersection Capacity Utilization 80.9% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	128	204	136	173	372	199	842	130	102	1035
v/c Ratio	0.74	0.32	0.49	0.42	0.24	0.43	0.31	0.16	0.17	0.39
Control Delay	51.6	23.8	29.6	23.9	22.7	14.8	10.2	9.7	12.3	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	23.8	29.6	23.9	22.7	14.8	10.2	9.7	12.3	13.3
Queue Length 50th (ft)	62	50	65	69	56	29	89	37	14	122
Queue Length 95th (ft)	#138	77	111	117	79	79	109	64	29	156
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	183	668	293	417	1619	461	2732	833	588	2641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.31	0.46	0.41	0.23	0.43	0.31	0.16	0.17	0.39

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build SAT
02/24/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	200	215	170	245	120	195	825	205	100	900	115
Future Volume (veh/h)	125	200	215	170	245	120	195	825	205	100	900	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1897	1897	1885	1873	1873	1873
Adj Flow Rate, veh/h	128	204	136	173	250	122	199	842	130	102	918	117
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	1	1	1	1	1	1	2	2	2
Cap, veh/h	248	592	259	371	1069	475	616	2806	850	767	2466	313
Arrive On Green	0.06	0.06	0.06	0.10	0.31	0.31	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	1006	3554	1553	1795	3468	1541	1071	5179	1569	1121	4551	578
Grp Volume(v), veh/h	128	204	136	173	247	125	199	842	130	102	687	348
Grp Sat Flow(s),veh/h/ln	1006	1777	1553	1795	1716	1577	536	1726	1569	561	1705	1719
Q Serve(g_s), s	11.3	5.0	7.7	6.9	4.8	5.4	5.5	0.0	0.0	4.1	10.4	10.5
Cycle Q Clear(g_c), s	11.3	5.0	7.7	6.9	4.8	5.4	15.9	0.0	0.0	4.1	10.4	10.5
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	248	592	259	371	1058	486	616	2806	850	767	1847	932
V/C Ratio(X)	0.52	0.34	0.53	0.47	0.23	0.26	0.32	0.30	0.15	0.13	0.37	0.37
Avail Cap(c_a), veh/h	270	671	293	376	1144	526	616	2806	850	767	1847	932
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.8	37.8	39.1	25.7	23.2	23.4	1.7	0.0	0.0	10.4	11.8	11.8
Incr Delay (d2), s/veh	0.6	0.1	0.6	0.9	0.0	0.1	1.3	0.3	0.4	0.4	0.6	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(95%),veh/ln	5.5	4.0	5.6	5.3	3.5	3.5	0.2	0.1	0.1	0.9	6.7	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	37.9	39.7	26.6	23.2	23.5	3.0	0.3	0.4	10.8	12.4	13.0
LnGrp LOS	D	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		468			545			1171			1137	
Approach Delay, s/veh		39.4			24.4			0.7			12.4	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		55.3		34.7		55.3	12.7	22.0				
Change Period (Y+Rc), s		6.5		7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5		30.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.5		7.4		17.9	8.9	13.3				
Green Ext Time (p_c), s		7.4		1.2		10.1	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay				14.1								
HCM 6th LOS				B								

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	385	95	120	870	985	300
Future Volume (vph)	385	95	120	870	985	300
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3467	1599	3473	5144	5085	1583
Fl _t Permitted	0.950		0.200			
Satd. Flow (perm)	3462	1576	731	5144	5085	1563
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						312
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Adj. Flow (vph)	418	64	130	946	1071	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	64	130	946	1071	326
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

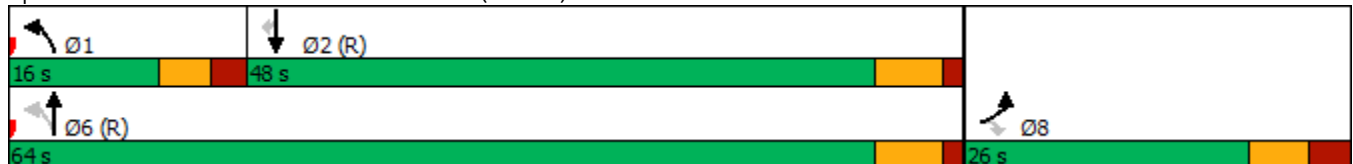


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	15.8	15.8	61.2	61.2	48.2	48.2
Actuated g/C Ratio	0.18	0.18	0.68	0.68	0.54	0.54
v/c Ratio	0.69	0.23	0.18	0.27	0.39	0.33
Control Delay	40.7	33.0	5.8	6.1	8.5	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	33.0	5.8	6.1	8.5	1.4
LOS	D	C	A	A	A	A
Approach Delay	39.7			6.1	6.9	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 57 (63%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 11.9
 Intersection LOS: B
 Intersection Capacity Utilization 51.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	418	64	130	946	1071	326
v/c Ratio	0.69	0.23	0.18	0.27	0.39	0.33
Control Delay	40.7	33.0	5.8	6.1	8.5	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	33.0	5.8	6.1	8.5	1.4
Queue Length 50th (ft)	115	32	11	68	74	1
Queue Length 95th (ft)	158	65	22	97	90	6
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	731	332	801	3498	2723	981
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	0.57	0.19	0.16	0.27	0.39	0.33
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build SAT
02/24/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷	↶↶	↶↶↶	↶↶↶	↷
Traffic Volume (veh/h)	385	95	120	870	985	300
Future Volume (veh/h)	385	95	120	870	985	300
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	1885	1885	1888	1888	1870	1870
Adj Flow Rate, veh/h	418	64	130	946	1071	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	520	239	1003	3640	2884	
Arrive On Green	0.15	0.15	0.07	0.71	1.00	0.00
Sat Flow, veh/h	3483	1598	3489	5325	5274	1585
Grp Volume(v), veh/h	418	64	130	946	1071	0
Grp Sat Flow(s),veh/h/ln	1742	1598	1744	1718	1702	1585
Q Serve(g_s), s	10.4	3.2	1.2	5.9	0.0	0.0
Cycle Q Clear(g_c), s	10.4	3.2	1.2	5.9	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	520	239	1003	3640	2884	
V/C Ratio(X)	0.80	0.27	0.13	0.26	0.37	
Avail Cap(c_a), veh/h	735	337	1130	3640	2884	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.92	0.00
Uniform Delay (d), s/veh	37.0	33.9	5.4	4.8	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	2.2	0.6	3.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.4	34.5	5.4	4.9	0.3	0.0
LnGrp LOS	D	C	A	A	A	
Approach Vol, veh/h	482			1076	1071	
Approach Delay, s/veh	40.4			5.0	0.3	
Approach LOS	D			A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	56.8			69.6	20.4
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	2.0			7.9	12.4
Green Ext Time (p_c), s	0.1	9.3			8.0	1.0

Intersection Summary

HCM 6th Ctrl Delay			9.6			
HCM 6th LOS			A			

Notes

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

Appendix E
Alternate Improvement
Peak Hour Analysis Outputs

Build Traffic - With Alternate Modifications

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Future Volume (vph)	50	245	25	205	205	140	15	20	70	95	30	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99		1.00	0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.979		0.950		
Satd. Flow (prot)	1736	3471	1553	1736	3471	1553	0	1824	1583	1736	1827	1553
Flt Permitted	0.608			0.583				0.853		0.732		
Satd. Flow (perm)	1110	3471	1518	1064	3471	1531	0	1588	1558	1333	1827	1531
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	2		1	1		2	1		3	3		1
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	2%	2%	2%	4%	4%	4%
Adj. Flow (vph)	56	275	17	230	230	98	17	22	79	107	34	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	275	17	230	230	98	0	39	79	107	34	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 04/21/2023

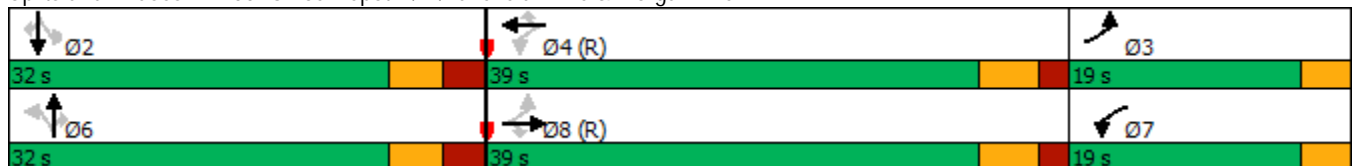


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	3	8		7	4			6			2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	19.0	39.0	39.0	19.0	39.0	39.0	32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	21.1%	43.3%	43.3%	21.1%	43.3%	43.3%	35.6%	35.6%	35.6%	35.6%	35.6%	35.6%
Maximum Green (s)	15.5	33.0	33.0	15.5	33.0	33.0	25.5	25.5	25.5	25.5	25.5	25.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	65.9	56.4	56.4	66.6	59.7	59.7		13.9	13.9	13.9	13.9	13.9
Actuated g/C Ratio	0.73	0.63	0.63	0.74	0.66	0.66		0.15	0.15	0.15	0.15	0.15
v/c Ratio	0.07	0.13	0.02	0.27	0.10	0.10		0.16	0.33	0.52	0.12	0.06
Control Delay	4.4	8.5	9.1	2.5	4.3	4.9		32.9	36.5	43.5	32.0	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	8.5	9.1	2.5	4.3	4.9		32.9	36.5	43.5	32.0	30.8
LOS	A	A	A	A	A	A		C	D	D	C	C
Approach Delay		7.9			3.7			35.3			39.9	
Approach LOS		A			A			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 68 (76%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 12.8
 Intersection LOS: B
 Intersection Capacity Utilization 47.0%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	56	275	17	230	230	98	39	79	107	34	14
v/c Ratio	0.07	0.13	0.02	0.27	0.10	0.10	0.16	0.33	0.52	0.12	0.06
Control Delay	4.4	8.5	9.1	2.5	4.3	4.9	32.9	36.5	43.5	32.0	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.4	8.5	9.1	2.5	4.3	4.9	32.9	36.5	43.5	32.0	30.8
Queue Length 50th (ft)	7	33	4	13	11	9	20	41	57	17	7
Queue Length 95th (ft)	20	59	14	19	25	26	45	76	101	40	22
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	1013	2176	952	992	2304	1016	449	441	377	517	433
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.13	0.02	0.23	0.10	0.10	0.09	0.18	0.28	0.07	0.03

Intersection Summary

HCM 6th Signalized Intersection Summary
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build Midday
 04/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	245	25	205	205	140	15	20	70	95	30	20
Future Volume (veh/h)	50	245	25	205	205	140	15	20	70	95	30	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	56	275	17	230	230	98	17	22	79	107	34	14
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, %	4	4	4	4	4	4	2	2	2	4	4	4
Cap, veh/h	1033	1282	558	985	1282	564	129	144	202	221	239	199
Arrive On Green	0.33	0.37	0.37	0.54	0.61	0.61	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1753	3497	1523	1753	3497	1538	549	1110	1553	1266	1841	1528
Grp Volume(v), veh/h	56	275	17	230	230	98	39	0	79	107	34	14
Grp Sat Flow(s),veh/h/ln	1753	1749	1523	1753	1749	1538	1658	0	1553	1266	1841	1528
Q Serve(g_s), s	0.0	4.9	0.6	0.0	2.6	2.5	0.0	0.0	4.2	7.4	1.5	0.7
Cycle Q Clear(g_c), s	0.0	4.9	0.6	0.0	2.6	2.5	1.7	0.0	4.2	9.1	1.5	0.7
Prop In Lane	1.00		1.00	1.00		1.00	0.44		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1033	1282	558	985	1282	564	273	0	202	221	239	199
V/C Ratio(X)	0.05	0.21	0.03	0.23	0.18	0.17	0.14	0.00	0.39	0.48	0.14	0.07
Avail Cap(c_a), veh/h	1033	1282	558	985	1282	564	518	0	440	415	522	433
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.4	19.6	18.3	4.7	11.5	11.5	34.8	0.0	35.9	38.8	34.7	34.4
Incr Delay (d2), s/veh	0.0	0.4	0.1	0.1	0.3	0.7	0.2	0.0	1.2	2.3	0.4	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(95%),veh/ln	0.6	3.6	0.4	2.1	1.8	1.6	1.4	0.0	2.9	4.4	1.2	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.4	20.0	18.4	4.8	11.9	12.2	35.0	0.0	37.1	41.1	35.1	34.6
LnGrp LOS	A	B	B	A	B	B	D	A	D	D	D	C
Approach Vol, veh/h		348			558			118			155	
Approach Delay, s/veh		17.5			9.0			36.4			39.2	
Approach LOS		B			A			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		18.2	32.8	39.0		18.2	32.8	39.0				
Change Period (Y+Rc), s		6.5	3.5	6.0		6.5	3.5	6.0				
Max Green Setting (Gmax), s		25.5	15.5	33.0		25.5	15.5	33.0				
Max Q Clear Time (g_c+I1), s		11.1	2.0	4.6		6.2	2.0	6.9				
Green Ext Time (p_c), s		0.7	0.1	1.8		0.4	0.5	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			18.2									
HCM 6th LOS			B									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	410	1	0	550	0	95
Future Volume (vph)	410	1	0	550	0	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3471	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3471	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		2
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	1%	1%	1%	1%
Adj. Flow (vph)	427	1	0	573	0	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	428	0	0	573	0	99
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	24.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	410	1	0	550	0	95
Future Vol, veh/h	410	1	0	550	0	95
Conflicting Peds, #/hr	0	1	1	0	1	2
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	96	96	96	96	96	96
Heavy Vehicles, %	4	4	1	1	1	1
Mvmt Flow	427	1	0	573	0	99

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	- - - 217
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.92
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.31
Pot Cap-1 Maneuver	-	- 0	- 0 791
Stage 1	-	- 0	- 0 -
Stage 2	-	- 0	- 0 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- - - 789
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	789	-	-	-
HCM Lane V/C Ratio	0.125	-	-	-
HCM Control Delay (s)	10.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build Midday
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	185	195	205	265	150	180	760	190	125	870	105
Future Volume (vph)	125	185	195	205	265	150	180	760	190	125	870	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.98	1.00	1.00	
Frt			0.850		0.946				0.850		0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3505	1568	1752	4733	0	3388	5019	1553	3405	4954	0
Flt Permitted	0.491			0.610			0.246			0.329		
Satd. Flow (perm)	904	3505	1533	1120	4733	0	877	5019	1527	1177	4954	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	3		6	6		3	7		7	7		7
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	4%	4%	4%	3%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	130	193	126	214	276	156	188	792	123	130	906	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	193	126	214	432	0	188	792	123	130	1015	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build MIDDAY
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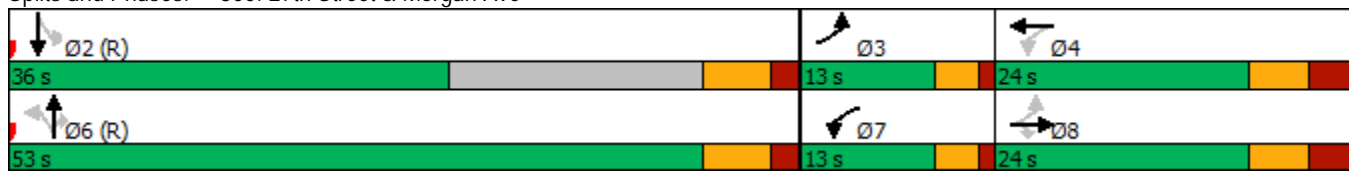


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	3	8		7	4			6				2
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	8	7	4		6	6	6	2		2
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	11.0	23.0	23.0	11.0	23.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	13.0	24.0	24.0	13.0	24.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	14.4%	26.7%	26.7%	14.4%	26.7%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	9.0	17.0	17.0	9.0	17.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	26.8	15.3	15.3	27.7	15.7		48.2	48.2	48.2	48.2	48.2	
Actuated g/C Ratio	0.30	0.17	0.17	0.31	0.17		0.54	0.54	0.54	0.54	0.54	
v/c Ratio	0.37	0.32	0.48	0.53	0.52		0.40	0.29	0.15	0.21	0.38	
Control Delay	16.2	24.8	30.5	27.7	36.4		13.3	9.8	9.2	12.1	12.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.2	24.8	30.5	27.7	36.4		13.3	9.8	9.2	12.1	12.8	
LOS	B	C	C	C	D		B	A	A	B	B	
Approach Delay	23.9			33.5			10.3			12.7		
Approach LOS	C			C			B			B		

Intersection Summary

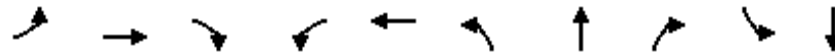
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 76 (84%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 17.4 Intersection LOS: B
 Intersection Capacity Utilization 73.1% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build Midday
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	130	193	126	214	432	188	792	123	130	1015
v/c Ratio	0.37	0.32	0.48	0.53	0.52	0.40	0.29	0.15	0.21	0.38
Control Delay	16.2	24.8	30.5	27.7	36.4	13.3	9.8	9.2	12.1	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	24.8	30.5	27.7	36.4	13.3	9.8	9.2	12.1	12.8
Queue Length 50th (ft)	27	45	57	90	83	28	84	35	18	115
Queue Length 95th (ft)	46	68	97	145	114	45	104	61	36	151
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	359	662	289	408	894	469	2689	817	630	2654
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.29	0.44	0.52	0.48	0.40	0.29	0.15	0.21	0.38

Intersection Summary

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build Midday
04/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	185	195	205	265	150	180	760	190	125	870	105
Future Volume (veh/h)	125	185	195	205	265	150	180	760	190	125	870	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1852	1852	1841	1858	1858	1858
Adj Flow Rate, veh/h	130	193	126	214	276	156	188	792	123	130	906	109
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	4	4	4	3	3	3
Cap, veh/h	311	588	256	376	632	287	612	2725	827	793	2452	294
Arrive On Green	0.03	0.06	0.06	0.10	0.19	0.19	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	1767	3526	1535	1767	3377	1537	1066	5057	1535	1174	4550	545
Grp Volume(v), veh/h	130	193	126	214	276	156	188	792	123	130	673	342
Grp Sat Flow(s),veh/h/ln	1767	1763	1535	1767	1689	1537	533	1686	1535	587	1691	1713
Q Serve(g_s), s	5.4	4.7	7.2	9.0	6.5	8.3	5.0	0.0	0.0	5.2	10.3	10.4
Cycle Q Clear(g_c), s	5.4	4.7	7.2	9.0	6.5	8.3	15.4	0.0	0.0	5.2	10.3	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	311	588	256	376	632	287	612	2725	827	793	1823	923
V/C Ratio(X)	0.42	0.33	0.49	0.57	0.44	0.54	0.31	0.29	0.15	0.16	0.37	0.37
Avail Cap(c_a), veh/h	347	666	290	376	638	290	612	2725	827	793	1823	923
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	37.7	38.8	27.7	32.4	33.1	1.6	0.0	0.0	10.8	11.9	12.0
Incr Delay (d2), s/veh	0.9	0.1	0.5	2.0	0.2	1.1	1.2	0.3	0.4	0.4	0.6	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(95%),veh/ln	4.4	3.8	5.2	7.1	4.7	5.6	0.2	0.1	0.1	1.2	6.6	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	37.8	39.4	29.8	32.6	34.2	2.9	0.3	0.4	11.2	12.5	13.1
LnGrp LOS	C	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		449			646			1103			1145	
Approach Delay, s/veh		36.1			32.0			0.7			12.5	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0	11.2	23.8		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5	4.0	7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5	9.0	17.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.4	7.4	10.3		17.4	11.0	9.2				
Green Ext Time (p_c), s		7.5	0.0	0.9		9.5	0.0	0.5				

Intersection Summary

HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	340	85	120	820	935	335
Future Volume (vph)	340	85	120	820	935	335
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.98	1.00			0.98
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3433	1583	3372	4995	5036	1568
Fl _t Permitted	0.950		0.230			
Satd. Flow (perm)	3423	1556	815	4995	5036	1543
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						349
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	2	3	12			5
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Adj. Flow (vph)	354	55	125	854	974	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	354	55	125	854	974	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.8	14.8	62.2	62.2	49.2	49.2
Actuated g/C Ratio	0.16	0.16	0.69	0.69	0.55	0.55
v/c Ratio	0.63	0.22	0.16	0.25	0.35	0.35
Control Delay	40.0	33.8	5.3	5.6	8.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.8	5.3	5.6	8.3	1.5
LOS	D	C	A	A	A	A
Approach Delay	39.2			5.6	6.5	
Approach LOS	D			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 75 (83%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 11.1
 Intersection LOS: B
 Intersection Capacity Utilization 49.7%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build Midday
04/21/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	354	55	125	854	974	349
v/c Ratio	0.63	0.22	0.16	0.25	0.35	0.35
Control Delay	40.0	33.8	5.3	5.6	8.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	33.8	5.3	5.6	8.3	1.5
Queue Length 50th (ft)	97	28	9	56	65	2
Queue Length 95th (ft)	136	59	21	84	80	8
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)	130		150		100	
Base Capacity (vph)	724	328	847	3454	2755	1002
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	0.49	0.17	0.15	0.25	0.35	0.35
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build Midday
04/21/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↰	↱	↰↰	↑↑↑	↑↑↑	↰
Traffic Volume (veh/h)	340	85	120	820	935	335
Future Volume (veh/h)	340	85	120	820	935	335
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1844	1844	1856	1856
Adj Flow Rate, veh/h	354	55	125	854	974	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	4	4	3	3
Cap, veh/h	461	211	906	3635	2944	
Arrive On Green	0.13	0.13	0.07	0.72	0.39	0.00
Sat Flow, veh/h	3456	1585	3406	5199	5233	1572
Grp Volume(v), veh/h	354	55	125	854	974	0
Grp Sat Flow(s),veh/h/ln	1728	1585	1703	1678	1689	1572
Q Serve(g_s), s	8.9	2.8	1.1	5.1	12.1	0.0
Cycle Q Clear(g_c), s	8.9	2.8	1.1	5.1	12.1	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	461	211	906	3635	2944	
V/C Ratio(X)	0.77	0.26	0.14	0.23	0.33	
Avail Cap(c_a), veh/h	730	335	1031	3635	2944	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.91	0.00
Uniform Delay (d), s/veh	37.7	35.0	6.1	4.2	15.2	0.0
Incr Delay (d2), s/veh	2.7	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.9	2.0	0.6	2.5	8.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.4	35.7	6.1	4.3	15.5	0.0
LnGrp LOS	D	D	A	A	B	
Approach Vol, veh/h	409			979	974	
Approach Delay, s/veh	39.8			4.6	15.5	
Approach LOS	D			A	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	58.3			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.1	14.1			7.1	10.9
Green Ext Time (p_c), s	0.1	7.6			7.1	0.9

Intersection Summary

HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Future Volume (vph)	50	320	30	170	345	200	20	25	70	180	30	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98		1.00	0.99	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950		
Satd. Flow (prot)	1752	3505	1568	1770	3539	1583	0	1840	1599	1787	1881	1599
Flt Permitted	0.531			0.545				0.875		0.725		
Satd. Flow (perm)	978	3505	1532	1015	3539	1558	0	1644	1578	1363	1881	1574
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25				25
Link Distance (ft)		921			213			410				879
Travel Time (s)		20.9			4.8			11.2				24.0
Confl. Peds. (#/hr)	3		1	1		3	4		1	1		4
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	54	344	20	183	371	133	22	27	75	194	32	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	344	20	183	371	133	0	49	75	194	32	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 04/21/2023

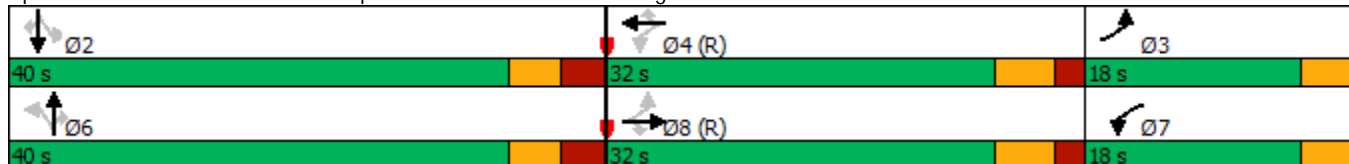


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	3	8		7	4			6			2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	18.0	32.0	32.0	18.0	32.0	32.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	20.0%	35.6%	35.6%	20.0%	35.6%	35.6%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%
Maximum Green (s)	14.5	26.0	26.0	14.5	26.0	26.0	33.5	33.5	33.5	33.5	33.5	33.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	57.3	47.8	47.8	58.0	49.9	49.9		19.2	19.2	19.2	19.2	19.2
Actuated g/C Ratio	0.64	0.53	0.53	0.64	0.55	0.55		0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.08	0.18	0.02	0.26	0.19	0.15		0.14	0.22	0.67	0.08	0.11
Control Delay	7.0	12.4	12.6	5.0	10.1	10.9		27.0	28.6	42.9	25.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	12.4	12.6	5.0	10.1	10.9		27.0	28.6	42.9	25.8	26.5
LOS	A	B	B	A	B	B		C	C	D	C	C
Approach Delay		11.7			8.9			28.0			38.5	
Approach LOS		B			A			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 61 (68%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 16.5 Intersection LOS: B
 Intersection Capacity Utilization 49.8% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	344	20	183	371	133	49	75	194	32	37
v/c Ratio	0.08	0.18	0.02	0.26	0.19	0.15	0.14	0.22	0.67	0.08	0.11
Control Delay	7.0	12.4	12.6	5.0	10.1	10.9	27.0	28.6	42.9	25.8	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	12.4	12.6	5.0	10.1	10.9	27.0	28.6	42.9	25.8	26.5
Queue Length 50th (ft)	9	50	5	18	41	28	23	36	102	15	17
Queue Length 95th (ft)	27	90	19	m44	67	m55	47	65	155	34	38
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	828	1860	813	860	1961	863	611	587	507	700	585
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.18	0.02	0.21	0.19	0.15	0.08	0.13	0.38	0.05	0.06

Intersection Summary

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

HCM 6th Signalized Intersection Summary
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build PM
 04/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	320	30	170	345	200	20	25	70	180	30	55
Future Volume (veh/h)	50	320	30	170	345	200	20	25	70	180	30	55
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	0.99		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	54	344	20	183	371	133	22	27	75	194	32	37
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	2	2	2	1	1	1	1	1	1
Cap, veh/h	899	1018	442	886	1027	451	183	204	316	314	381	316
Arrive On Green	0.33	0.29	0.29	0.66	0.58	0.58	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1767	3526	1531	1781	3554	1560	618	1012	1567	1296	1885	1567
Grp Volume(v), veh/h	54	344	20	183	371	133	49	0	75	194	32	37
Grp Sat Flow(s),veh/h/ln	1767	1763	1531	1781	1777	1560	1631	0	1567	1296	1885	1567
Q Serve(g_s), s	0.0	6.9	0.8	0.0	5.0	3.9	0.0	0.0	3.6	13.0	1.2	1.7
Cycle Q Clear(g_c), s	0.0	6.9	0.8	0.0	5.0	3.9	1.9	0.0	3.6	14.9	1.2	1.7
Prop In Lane	1.00		1.00	1.00		1.00	0.45		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	899	1018	442	886	1027	451	387	0	316	314	381	316
V/C Ratio(X)	0.06	0.34	0.05	0.21	0.36	0.30	0.13	0.00	0.24	0.62	0.08	0.12
Avail Cap(c_a), veh/h	899	1018	442	886	1027	451	658	0	583	535	702	583
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.0	25.2	23.1	5.2	14.6	14.3	29.4	0.0	30.1	35.5	29.2	29.4
Incr Delay (d2), s/veh	0.0	0.9	0.2	0.1	1.0	1.7	0.1	0.0	0.4	2.8	0.1	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(95%),veh/ln	0.8	5.3	0.6	1.6	3.4	2.6	1.6	0.0	2.5	7.7	1.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	26.1	23.2	5.3	15.6	16.0	29.6	0.0	30.5	38.3	29.3	29.6
LnGrp LOS	A	C	C	A	B	B	C	A	C	D	C	C
Approach Vol, veh/h		418			687			124			263	
Approach Delay, s/veh		23.8			12.9			30.1			36.0	
Approach LOS		C			B			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		24.7	33.3	32.0		24.7	33.3	32.0				
Change Period (Y+Rc), s		6.5	3.5	6.0		6.5	3.5	6.0				
Max Green Setting (Gmax), s		33.5	14.5	26.0		33.5	14.5	26.0				
Max Q Clear Time (g_c+I1), s		16.9	2.0	7.0		5.6	2.0	8.9				
Green Ext Time (p_c), s		1.3	0.1	2.8		0.5	0.4	2.1				

Intersection Summary

HCM 6th Ctrl Delay	21.5
HCM 6th LOS	C

Lanes, Volumes, Timings
200: RIRO D/W & Morgan Ave

Build PM
04/21/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Volume (vph)	570	1	0	715	0	80
Future Volume (vph)	570	1	0	715	0	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	633	1	0	794	0	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	634	0	0	794	0	89
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free		Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	27.8%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	570	1	0	715	0	80
Future Vol, veh/h	570	1	0	715	0	80
Conflicting Peds, #/hr	0	1	1	0	1	1
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	90	90	90	90	90	90
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	633	1	0	794	0	89

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	319
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	680
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	679
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	679	-	-	-
HCM Lane V/C Ratio	0.131	-	-	-
HCM Control Delay (s)	11.1	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.4	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	315	235	205	405	140	190	855	200	140	1185	120
Future Volume (vph)	100	315	235	205	405	140	190	855	200	140	1185	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.99	1.00	1.00	
Frt			0.850		0.961				0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3438	1538	1770	4857	0	3421	5068	1568	3438	5013	0
Flt Permitted	0.419			0.469			0.149			0.288		
Satd. Flow (perm)	756	3438	1511	872	4857	0	536	5068	1546	1042	5013	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	7		3	3		7	13		3	3		13
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	104	328	152	214	422	146	198	891	129	146	1234	125
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	328	152	214	568	0	198	891	129	146	1359	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build PM
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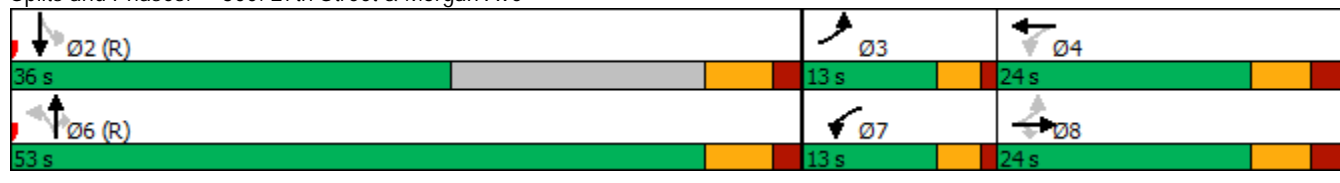


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	3	8		7	4			6				2
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	8	7	4		6	6	6	2		2
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	11.0	23.0	23.0	11.0	23.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	13.0	24.0	24.0	13.0	24.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	14.4%	26.7%	26.7%	14.4%	26.7%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	9.0	17.0	17.0	9.0	17.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	27.0	15.6	15.6	28.6	18.4		47.9	47.9	47.9	47.9	47.9	
Actuated g/C Ratio	0.30	0.17	0.17	0.32	0.20		0.53	0.53	0.53	0.53	0.53	
v/c Ratio	0.33	0.55	0.58	0.58	0.57		0.69	0.33	0.16	0.26	0.51	
Control Delay	16.0	28.4	34.1	29.4	35.8		29.6	9.9	9.3	13.2	14.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.0	28.4	34.1	29.4	35.8		29.6	9.9	9.3	13.2	14.4	
LOS	B	C	C	C	D		C	A	A	B	B	
Approach Delay	27.6			34.0			13.1			14.3		
Approach LOS	C			C			B			B		

Intersection Summary

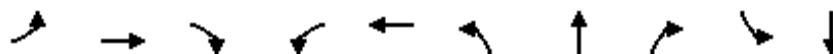
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 73 (81%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 19.6 Intersection LOS: B
 Intersection Capacity Utilization 79.5% ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build PM
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	104	328	152	214	568	198	891	129	146	1359
v/c Ratio	0.33	0.55	0.58	0.58	0.57	0.69	0.33	0.16	0.26	0.51
Control Delay	16.0	28.4	34.1	29.4	35.8	29.6	9.9	9.3	13.2	14.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	28.4	34.1	29.4	35.8	29.6	9.9	9.3	13.2	14.4
Queue Length 50th (ft)	36	72	65	90	112	48	91	35	21	168
Queue Length 95th (ft)	57	101	105	143	147	#107	110	61	43	217
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	327	649	285	366	1036	285	2699	823	555	2670
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.51	0.53	0.58	0.55	0.69	0.33	0.16	0.26	0.51

Intersection Summary

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

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build PM
04/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	100	315	235	205	405	140	190	855	200	140	1185	120
Future Volume (veh/h)	100	315	235	205	405	140	190	855	200	140	1185	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1867	1867	1856	1873	1873	1873
Adj Flow Rate, veh/h	104	328	152	214	422	146	198	891	129	146	1234	125
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	3	3	3	2	2	2
Cap, veh/h	277	578	251	326	734	242	450	2747	831	737	2520	255
Arrive On Green	0.02	0.06	0.06	0.10	0.19	0.19	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	1739	3469	1508	1781	3771	1244	775	5098	1542	1071	4675	474
Grp Volume(v), veh/h	104	328	152	214	379	189	198	891	129	146	900	459
Grp Sat Flow(s),veh/h/ln	1739	1735	1508	1781	1702	1611	388	1699	1542	536	1705	1739
Q Serve(g_s), s	4.4	8.3	8.9	8.9	9.1	9.6	13.4	0.0	0.0	6.6	14.9	14.9
Cycle Q Clear(g_c), s	4.4	8.3	8.9	8.9	9.1	9.6	28.3	0.0	0.0	6.6	14.9	14.9
Prop In Lane	1.00		1.00	1.00		0.77	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	277	578	251	326	663	314	450	2747	831	737	1837	937
V/C Ratio(X)	0.38	0.57	0.60	0.66	0.57	0.60	0.44	0.32	0.16	0.20	0.49	0.49
Avail Cap(c_a), veh/h	326	655	285	326	663	314	450	2747	831	737	1837	937
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.5	39.4	39.6	27.6	32.8	33.1	4.3	0.0	0.0	11.1	13.0	13.0
Incr Delay (d2), s/veh	0.8	0.3	1.5	4.7	0.8	2.3	2.9	0.3	0.4	0.6	0.9	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	6.8	6.5	7.4	6.7	7.0	1.0	0.1	0.2	1.4	9.2	9.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.4	39.7	41.2	32.4	33.6	35.4	7.3	0.3	0.4	11.7	13.9	14.8
LnGrp LOS	C	D	D	C	C	D	A	A	A	B	B	B
Approach Vol, veh/h		584			782			1218			1505	
Approach Delay, s/veh		38.4			33.7			1.4			14.0	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		55.0	10.5	24.5		55.0	13.0	22.0				
Change Period (Y+Rc), s		6.5	4.0	7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5	9.0	17.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		16.9	6.4	11.6		30.3	10.9	10.9				
Green Ext Time (p_c), s		8.1	0.1	1.1		8.8	0.0	0.8				
Intersection Summary												
HCM 6th Ctrl Delay				17.5								
HCM 6th LOS				B								

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)

Build PM
04/21/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	340	95	105	945	1180	445
Future Volume (vph)	340	95	105	945	1180	445
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3367	1553	3438	5093	5085	1583
Fl _t Permitted	0.950		0.169			
Satd. Flow (perm)	3362	1530	612	5093	5085	1560
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						387
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	4			4
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	4%	2%	2%	2%	2%
Adj. Flow (vph)	351	61	108	974	1216	459
Shared Lane Traffic (%)						
Lane Group Flow (vph)	351	61	108	974	1216	459
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	12.0	12.0	7.0	12.0	12.0	12.0
Minimum Split (s)	19.0	19.0	13.0	18.0	18.0	18.0
Total Split (s)	26.0	26.0	16.0	64.0	48.0	48.0
Total Split (%)	28.9%	28.9%	17.8%	71.1%	53.3%	53.3%
Maximum Green (s)	19.0	19.0	10.0	58.0	42.0	42.0
Yellow Time (s)	4.0	4.0	3.5	4.5	4.5	4.5
All-Red Time (s)	3.0	3.0	2.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	1.5	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effect Green (s)	14.9	14.9	62.1	62.1	51.7	51.7
Actuated g/C Ratio	0.17	0.17	0.69	0.69	0.57	0.57
v/c Ratio	0.63	0.24	0.17	0.28	0.42	0.43
Control Delay	40.1	34.2	5.5	5.8	6.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	34.2	5.5	5.8	6.6	1.6
LOS	D	C	A	A	A	A
Approach Delay	39.2			5.8	5.2	
Approach LOS	D			A	A	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	72 (80%), Referenced to phase 2:SBT and 6:NBTL, Start of 1st Green
Natural Cycle:	55
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization	54.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 400: 27th Street & Loomis (STH 36)



Queues
400: 27th Street & Loomis (STH 36)

Build PM
04/21/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	351	61	108	974	1216	459
v/c Ratio	0.63	0.24	0.17	0.28	0.42	0.43
Control Delay	40.1	34.2	5.5	5.8	6.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	34.2	5.5	5.8	6.6	1.6
Queue Length 50th (ft)	97	31	8	66	69	4
Queue Length 95th (ft)	135	64	18	98	82	11
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	710	323	736	3516	2923	1061
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	0.49	0.19	0.15	0.28	0.42	0.43
Intersection Summary						

HCM 6th Signalized Intersection Summary
400: 27th Street & Loomis (STH 36)

Build PM
04/21/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↔	↔↔	↑↑↑	↓↓↓	↔
Traffic Volume (veh/h)	340	95	105	945	1180	445
Future Volume (veh/h)	340	95	105	945	1180	445
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	1841	1841	1873	1873	1870	1870
Adj Flow Rate, veh/h	351	61	108	974	1216	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	2	2	2	2
Cap, veh/h	453	208	931	3694	2977	
Arrive On Green	0.13	0.13	0.07	0.72	1.00	0.00
Sat Flow, veh/h	3401	1560	3461	5283	5274	1585
Grp Volume(v), veh/h	351	61	108	974	1216	0
Grp Sat Flow(s),veh/h/ln	1700	1560	1731	1705	1702	1585
Q Serve(g_s), s	9.0	3.2	0.9	5.9	0.0	0.0
Cycle Q Clear(g_c), s	9.0	3.2	0.9	5.9	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	453	208	931	3694	2977	
V/C Ratio(X)	0.77	0.29	0.12	0.26	0.41	
Avail Cap(c_a), veh/h	718	329	1064	3694	2977	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.84	0.00
Uniform Delay (d), s/veh	37.7	35.2	4.8	4.3	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.8	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
%ile BackOfQ(95%),veh/ln	6.9	2.2	0.5	2.9	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.5	36.0	4.9	4.5	0.4	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h				1082	1216	
Approach Delay, s/veh				4.5	0.4	
Approach LOS				A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.5	58.5			71.0	19.0
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	2.9	2.0			7.9	11.0
Green Ext Time (p_c), s	0.1	11.1			8.4	0.9

Intersection Summary

HCM 6th Ctrl Delay			8.0			
HCM 6th LOS			A			

Notes

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

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
 04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Future Volume (vph)	60	205	25	210	205	140	20	25	100	130	40	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		80	135		0	0		0	0		50
Storage Lanes	1		1	1		1	0		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00		0.97	1.00		0.98		1.00	0.99	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950				0.978		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	0	1822	1583	1752	1845	1568
Flt Permitted	0.617			0.617				0.861		0.726		
Satd. Flow (perm)	1148	3539	1543	1147	3539	1559	0	1603	1562	1338	1845	1547
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		921			213			410			879	
Travel Time (s)		20.9			4.8			11.2			24.0	
Confl. Peds. (#/hr)	3		3	3		3	1		1	1		1
Confl. Bikes (#/hr)			1			1			1			1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	100%	100%	100%	62%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Adj. Flow (vph)	63	216	16	221	216	91	21	26	105	137	42	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	63	216	16	221	216	91	0	47	105	137	42	23
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
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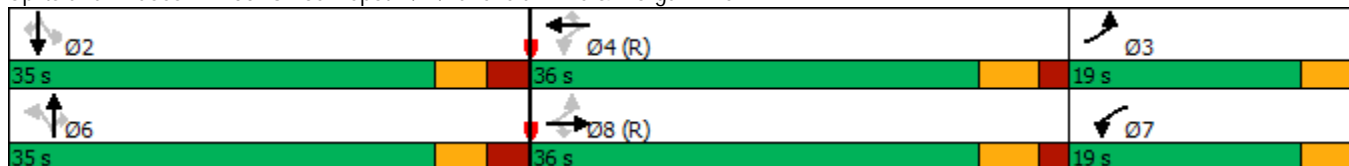


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	3	8		7	4			6			2	
Permitted Phases	8		8	4		4	6		6	2		2
Detector Phase	3	8	8	7	4	4	6	6	6	2	2	2
Switch Phase												
Minimum Initial (s)	7.0	12.0	12.0	7.0	12.0	12.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.5	18.0	18.0	10.5	18.0	18.0	16.5	16.5	16.5	16.5	16.5	16.5
Total Split (s)	19.0	36.0	36.0	19.0	36.0	36.0	35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	21.1%	40.0%	40.0%	21.1%	40.0%	40.0%	38.9%	38.9%	38.9%	38.9%	38.9%	38.9%
Maximum Green (s)	15.5	30.0	30.0	15.5	30.0	30.0	28.5	28.5	28.5	28.5	28.5	28.5
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	2.0	2.0	0.0	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	6.0	6.0	3.5	6.0	6.0		6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effect Green (s)	60.7	51.2	51.2	61.4	53.3	53.3		15.8	15.8	15.8	15.8	15.8
Actuated g/C Ratio	0.67	0.57	0.57	0.68	0.59	0.59		0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.08	0.11	0.02	0.27	0.10	0.10		0.17	0.38	0.59	0.13	0.09
Control Delay	5.3	10.0	10.4	3.2	6.5	7.3		30.8	35.5	43.5	29.9	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	10.0	10.4	3.2	6.5	7.3		30.8	35.5	43.5	29.9	29.2
LOS	A	A	B	A	A	A		C	D	D	C	C
Approach Delay		9.0			5.2			34.1			39.0	
Approach LOS		A			A			C			D	

Intersection Summary

Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 53 (59%), Referenced to phase 4:WBTL and 8:EBTL, Start of 1st Green
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 15.7
 Intersection LOS: B
 Intersection Capacity Utilization 49.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 100: Office Depot D/W/Lakefield Drive & Morgan Ave



Queues
100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	63	216	16	221	216	91	47	105	137	42	23
v/c Ratio	0.08	0.11	0.02	0.27	0.10	0.10	0.17	0.38	0.59	0.13	0.09
Control Delay	5.3	10.0	10.4	3.2	6.5	7.3	30.8	35.5	43.5	29.9	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	10.0	10.4	3.2	6.5	7.3	30.8	35.5	43.5	29.9	29.2
Queue Length 50th (ft)	9	27	4	16	13	10	23	54	73	21	11
Queue Length 95th (ft)	26	53	15	28	34	34	48	93	121	44	29
Internal Link Dist (ft)		841			133		330			799	
Turn Bay Length (ft)	135		80	135							50
Base Capacity (vph)	990	2014	878	998	2097	923	507	494	423	584	489
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.11	0.02	0.22	0.10	0.10	0.09	0.21	0.32	0.07	0.05

Intersection Summary

HCM 6th Signalized Intersection Summary
 100: Office Depot D/W/Lakefield Drive & Morgan Ave

Build SAT
 04/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	205	25	210	205	140	20	25	100	130	40	35
Future Volume (veh/h)	60	205	25	210	205	140	20	25	100	130	40	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.98	1.00		0.98
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	1856	1856	1856
Adj Flow Rate, veh/h	63	216	16	221	216	91	21	26	105	137	42	23
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	3	3	3
Cap, veh/h	1018	1185	515	997	1185	520	152	168	251	253	298	249
Arrive On Green	0.33	0.33	0.33	0.55	0.56	0.56	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3554	1545	1781	3554	1561	589	1045	1561	1247	1856	1549
Grp Volume(v), veh/h	63	216	16	221	216	91	47	0	105	137	42	23
Grp Sat Flow(s),veh/h/ln	1781	1777	1545	1781	1777	1561	1634	0	1561	1247	1856	1549
Q Serve(g_s), s	0.0	3.9	0.6	0.0	2.7	2.6	0.0	0.0	5.4	9.6	1.7	1.1
Cycle Q Clear(g_c), s	0.0	3.9	0.6	0.0	2.7	2.6	1.9	0.0	5.4	11.5	1.7	1.1
Prop In Lane	1.00		1.00	1.00		1.00	0.45		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1018	1185	515	997	1185	520	320	0	251	253	298	249
V/C Ratio(X)	0.06	0.18	0.03	0.22	0.18	0.17	0.15	0.00	0.42	0.54	0.14	0.09
Avail Cap(c_a), veh/h	1018	1185	515	997	1185	520	568	0	494	448	588	490
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.5	21.3	20.2	5.1	13.9	13.9	32.5	0.0	34.0	37.5	32.4	32.2
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.1	0.3	0.7	0.2	0.0	1.1	2.5	0.3	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(95%),veh/ln	0.8	3.0	0.4	2.1	2.0	1.8	1.6	0.0	3.8	5.5	1.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	21.6	20.3	5.2	14.2	14.6	32.7	0.0	35.1	40.0	32.8	32.4
LnGrp LOS	A	C	C	A	B	B	C	A	D	D	C	C
Approach Vol, veh/h		295			528			152			202	
Approach Delay, s/veh		18.3			10.5			34.4			37.7	
Approach LOS		B			B			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		20.9	33.1	36.0		20.9	33.1	36.0				
Change Period (Y+Rc), s		6.5	3.5	6.0		6.5	3.5	6.0				
Max Green Setting (Gmax), s		28.5	15.5	30.0		28.5	15.5	30.0				
Max Q Clear Time (g_c+I1), s		13.5	2.0	4.7		7.4	2.0	5.9				
Green Ext Time (p_c), s		0.9	0.1	1.7		0.5	0.5	1.4				
Intersection Summary												
HCM 6th Ctrl Delay				20.2								
HCM 6th LOS				C								



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↗
Traffic Volume (vph)	435	1	0	555	0	105
Future Volume (vph)	435	1	0	555	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt						0.865
Flt Protected						
Satd. Flow (prot)	3505	0	0	5136	0	1627
Flt Permitted						
Satd. Flow (perm)	3505	0	0	5136	0	1627
Link Speed (mph)	30			30	25	
Link Distance (ft)	213			224	242	
Travel Time (s)	4.8			5.1	6.6	
Confl. Peds. (#/hr)	1		1	1		1
Confl. Bikes (#/hr)	1					
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	1%	1%	1%	1%
Adj. Flow (vph)	489	1	0	624	0	118
Shared Lane Traffic (%)						
Lane Group Flow (vph)	490	0	0	624	0	118
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12				12	0
Link Offset(ft)	0				0	0
Crosswalk Width(ft)	16				16	16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free		Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↑
Traffic Vol, veh/h	435	1	0	555	0	105
Future Vol, veh/h	435	1	0	555	0	105
Conflicting Peds, #/hr	0	1	1	0	1	1
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	89	89	89	89	89	89
Heavy Vehicles, %	3	3	1	1	1	1
Mvmt Flow	489	1	0	624	0	118

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	-	-	247
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.31
Pot Cap-1 Maneuver	-	-	0	-	756
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	755
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	755	-	-	-
HCM Lane V/C Ratio	0.156	-	-	-
HCM Control Delay (s)	10.6	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build SAT
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	200	215	170	245	120	195	825	205	100	900	115
Future Volume (vph)	125	200	215	170	245	120	195	825	205	100	900	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1912	1912	1900	1903	1903	1903
Storage Length (ft)	125		95	85		0	125		125	75		0
Storage Lanes	1		1	1		0	2		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.97	0.91	1.00	0.97	0.91	0.91
Ped Bike Factor	1.00		0.98	1.00	0.99		1.00		0.99	1.00	1.00	
Fr _t			0.850		0.951				0.850		0.983	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1787	4853	0	3489	5168	1599	3438	4996	0
Fl _t Permitted	0.522			0.612			0.239			0.309		
Satd. Flow (perm)	970	3539	1555	1149	4853	0	877	5168	1576	1117	4996	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		224			1221			620			696	
Travel Time (s)		5.1			27.8			12.1			13.6	
Confl. Peds. (#/hr)	4		3	3		4	10		3	3		10
Confl. Bikes (#/hr)			1			1			1			1
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
Growth Factor	100%	100%	62%	100%	100%	100%	100%	100%	62%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	5
Adj. Flow (vph)	128	204	136	173	250	122	199	842	130	102	918	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	204	136	173	372	0	199	842	130	102	1035	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	

Lanes, Volumes, Timings
300: 27th Street & Morgan Ave

Build SAT
04/21/2023

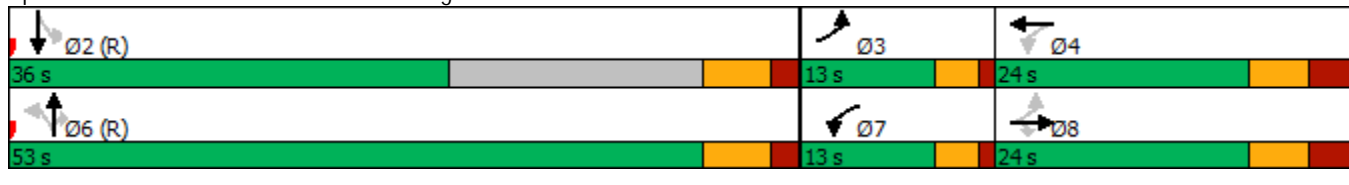


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Type	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	3	8		7	4			6				2
Permitted Phases	8		8	4			6		6	2		
Detector Phase	3	8	8	7	4		6	6	6	2		2
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		12.0	12.0	12.0	12.0	12.0	
Minimum Split (s)	11.0	23.0	23.0	11.0	23.0		18.5	18.5	18.5	18.5	18.5	
Total Split (s)	13.0	24.0	24.0	13.0	24.0		53.0	53.0	53.0	36.0	36.0	
Total Split (%)	14.4%	26.7%	26.7%	14.4%	26.7%		58.9%	58.9%	58.9%	40.0%	40.0%	
Maximum Green (s)	9.0	17.0	17.0	9.0	17.0		46.5	46.5	46.5	29.5	29.5	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.5	4.5	4.5	4.5	4.5	
All-Red Time (s)	1.0	3.0	3.0	1.0	3.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.0	7.0	7.0	4.0	7.0		6.5	6.5	6.5	6.5	6.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	1.5	1.5	3.0	1.5		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Act Effct Green (s)	26.9	15.4	15.4	27.4	15.6		48.3	48.3	48.3	48.3	48.3	
Actuated g/C Ratio	0.30	0.17	0.17	0.30	0.17		0.54	0.54	0.54	0.54	0.54	
v/c Ratio	0.35	0.34	0.51	0.42	0.44		0.42	0.30	0.15	0.17	0.39	
Control Delay	15.0	24.4	30.9	24.8	35.1		14.0	9.8	9.3	11.9	12.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.0	24.4	30.9	24.8	35.1		14.0	9.8	9.3	11.9	12.8	
LOS	B	C	C	C	D		B	A	A	B	B	
Approach Delay	23.7			31.8			10.5			12.7		
Approach LOS	C			C			B			B		

Intersection Summary

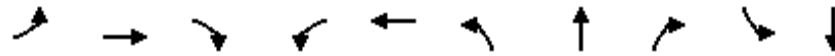
Area Type: Other
 Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 60 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of 1st Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 16.6 Intersection LOS: B
 Intersection Capacity Utilization 72.0% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 300: 27th Street & Morgan Ave



Queues
300: 27th Street & Morgan Ave

Build SAT
04/21/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	128	204	136	173	372	199	842	130	102	1035
v/c Ratio	0.35	0.34	0.51	0.42	0.44	0.42	0.30	0.15	0.17	0.39
Control Delay	15.0	24.4	30.9	24.8	35.1	14.0	9.8	9.3	11.9	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	24.4	30.9	24.8	35.1	14.0	9.8	9.3	11.9	12.8
Queue Length 50th (ft)	25	51	66	71	70	29	89	37	14	117
Queue Length 95th (ft)	48	77	111	117	98	79	109	64	29	156
Internal Link Dist (ft)		144			1141		540			616
Turn Bay Length (ft)	125		95	85		125		125	75	
Base Capacity (vph)	375	668	293	416	916	471	2775	846	599	2683
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.31	0.46	0.42	0.41	0.42	0.30	0.15	0.17	0.39

Intersection Summary

HCM 6th Signalized Intersection Summary
300: 27th Street & Morgan Ave

Build SAT
04/21/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑↑		↘↗	↑↑↑	↗	↘↗	↑↑↑	
Traffic Volume (veh/h)	125	200	215	170	245	120	195	825	205	100	900	115
Future Volume (veh/h)	125	200	215	170	245	120	195	825	205	100	900	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
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	0.98
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1897	1897	1885	1873	1873	1873
Adj Flow Rate, veh/h	128	204	136	173	250	122	199	842	130	102	918	117
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	1	1	1	1	1	1	2	2	2
Cap, veh/h	338	592	259	374	651	289	613	2795	847	765	2456	312
Arrive On Green	0.03	0.06	0.06	0.10	0.19	0.19	1.00	1.00	1.00	0.54	0.54	0.54
Sat Flow, veh/h	1781	3554	1553	1795	3466	1537	1071	5179	1569	1121	4551	578
Grp Volume(v), veh/h	128	204	136	173	247	125	199	842	130	102	687	348
Grp Sat Flow(s),veh/h/ln	1781	1777	1553	1795	1716	1573	536	1726	1569	561	1705	1719
Q Serve(g_s), s	5.3	5.0	7.7	7.0	5.7	6.3	5.5	0.0	0.0	4.1	10.4	10.5
Cycle Q Clear(g_c), s	5.3	5.0	7.7	7.0	5.7	6.3	16.0	0.0	0.0	4.1	10.4	10.5
Prop In Lane	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	338	592	259	374	644	295	613	2795	847	765	1840	928
V/C Ratio(X)	0.38	0.34	0.53	0.46	0.38	0.42	0.32	0.30	0.15	0.13	0.37	0.38
Avail Cap(c_a), veh/h	377	671	293	376	648	297	613	2795	847	765	1840	928
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	37.8	39.1	27.0	32.0	32.3	1.7	0.0	0.0	10.5	11.9	12.0
Incr Delay (d2), s/veh	0.7	0.1	0.6	0.9	0.1	0.4	1.3	0.3	0.4	0.4	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.3	4.0	5.6	5.5	4.2	4.3	0.2	0.1	0.2	0.9	6.8	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	37.9	39.7	27.9	32.1	32.6	3.0	0.3	0.4	10.8	12.5	13.1
LnGrp LOS	C	D	D	C	C	C	A	A	A	B	B	B
Approach Vol, veh/h		468			545			1171			1137	
Approach Delay, s/veh		36.3			30.9			0.7			12.6	
Approach LOS		D			C			A			B	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		55.1	11.0	23.9		55.1	12.9	22.0				
Change Period (Y+Rc), s		6.5	4.0	7.0		6.5	4.0	7.0				
Max Green Setting (Gmax), s		29.5	9.0	17.0		46.5	9.0	17.0				
Max Q Clear Time (g_c+I1), s		12.5	7.3	8.3		18.0	9.0	9.7				
Green Ext Time (p_c), s		7.4	0.0	0.9		10.1	0.0	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			14.7									
HCM 6th LOS			B									

Lanes, Volumes, Timings
400: 27th Street & Loomis (STH 36)



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙↘	↗	↙↘	↑↑↑	↑↑↑	↗
Traffic Volume (vph)	385	95	120	870	985	300
Future Volume (vph)	385	95	120	870	985	300
Ideal Flow (vphp)	1900	1900	1903	1903	1900	1900
Storage Length (ft)	0	130	150			100
Storage Lanes	2	1	2			1
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	0.97	0.91	0.91	1.00
Ped Bike Factor	1.00	0.99	1.00			0.99
Fr _t		0.850				0.850
Fl _t Protected	0.950		0.950			
Satd. Flow (prot)	3467	1599	3473	5144	5085	1583
Fl _t Permitted	0.950		0.200			
Satd. Flow (perm)	3462	1576	731	5144	5085	1563
Right Turn on Red		No				Yes
Satd. Flow (RTOR)						312
Link Speed (mph)	35			35	35	
Link Distance (ft)	2126			763	620	
Travel Time (s)	41.4			14.9	12.1	
Confl. Peds. (#/hr)	1	1	1			1
Confl. Bikes (#/hr)		1				1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	62%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Adj. Flow (vph)	418	64	130	946	1071	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	418	64	130	946	1071	326
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			24	24	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	1
Detector Template	Left	Right	Left	Thru	Thru	Right
Leading Detector (ft)	20	20	20	100	100	20
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	20	6	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	

Queues
400: 27th Street & Loomis (STH 36)

Build SAT
04/21/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	418	64	130	946	1071	326
v/c Ratio	0.69	0.23	0.18	0.27	0.39	0.33
Control Delay	40.7	33.0	5.8	6.1	8.8	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	33.0	5.8	6.1	8.8	1.4
Queue Length 50th (ft)	115	32	11	68	74	3
Queue Length 95th (ft)	158	65	22	97	90	9
Internal Link Dist (ft)	2046			683	540	
Turn Bay Length (ft)		130	150			100
Base Capacity (vph)	731	332	801	3498	2723	981
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	0.57	0.19	0.16	0.27	0.39	0.33
Intersection Summary						

HCM 6th Signalized Intersection Summary

400: 27th Street & Loomis (STH 36)

Build SAT
04/21/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖↗	↖	↖↗	↑↑↑	↓↓↓	↘
Traffic Volume (veh/h)	385	95	120	870	985	300
Future Volume (veh/h)	385	95	120	870	985	300
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	1885	1885	1888	1888	1870	1870
Adj Flow Rate, veh/h	418	64	130	946	1071	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	1	1	2	2
Cap, veh/h	520	239	1003	3640	2884	
Arrive On Green	0.15	0.15	0.07	0.71	1.00	0.00
Sat Flow, veh/h	3483	1598	3489	5325	5274	1585
Grp Volume(v), veh/h	418	64	130	946	1071	0
Grp Sat Flow(s),veh/h/ln	1742	1598	1744	1718	1702	1585
Q Serve(g_s), s	10.4	3.2	1.2	5.9	0.0	0.0
Cycle Q Clear(g_c), s	10.4	3.2	1.2	5.9	0.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	520	239	1003	3640	2884	
V/C Ratio(X)	0.80	0.27	0.13	0.26	0.37	
Avail Cap(c_a), veh/h	735	337	1130	3640	2884	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.92	0.00
Uniform Delay (d), s/veh	37.0	33.9	5.4	4.8	0.0	0.0
Incr Delay (d2), s/veh	4.4	0.6	0.0	0.2	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	2.2	0.6	3.1	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.4	34.5	5.4	4.9	0.3	0.0
LnGrp LOS	D	C	A	A	A	
Approach Vol, veh/h	482			1076	1071	
Approach Delay, s/veh	40.4			5.0	0.3	
Approach LOS	D			A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.7	56.8			69.6	20.4
Change Period (Y+Rc), s	6.0	6.0			6.0	7.0
Max Green Setting (Gmax), s	10.0	42.0			58.0	19.0
Max Q Clear Time (g_c+I1), s	3.2	2.0			7.9	12.4
Green Ext Time (p_c), s	0.1	9.3			8.0	1.0

Intersection Summary

HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

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

