

MEDICAL OFFICE BUILDING - EDWARD HOSPITAL

Traffic Impact Study

Naperville, IL

November 2022

Prepared for:

Ryan Companies

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EXECUTIVE SUMMARY

Kimley-Horn and Associates, Inc. (Kimley-Horn) was retained by Ryan Companies to perform a traffic impact study for a medical office building proposed on the southwest corner of Washington Street and Martin Avenue in Naperville, Illinois. The proposed development totals approximately 96,430 square feet. In order to accommodate the development, the existing medical office building would be removed. Access to the development would be provided via two driveways along Martin Avenue: a full-access (Driveway 1) and a right-in/right-out (Driveway 4). As part of the redevelopment, access to Pam Davis Drive would be provided via the west driveway (Driveway 1); the existing right-in/right-out at Washington Street would be removed.

Based on a review of future traffic conditions, the addition of background traffic growth and site-generated traffic are not expected to materially impact the study intersections. To facilitate access to the proposed development and connectivity to Pam Davis Drive, a westbound left-turn lane should be installed on Martin Street at Driveway 1. The turn lane should provide 125 feet of storage and a 155-foot back-to-back taper with the existing eastbound left-turn lane on Martin Avenue at Washington Street. With the new turn lane, the existing eastbound left-turn storage length should be extended from 100 feet to 125 feet. The existing 200-foot parking box (approximately 8 spaces) on the north side of Martin Avenue and 95-foot parking box (approximately 4 spaces) on the south side of the street should be removed to accommodate the westbound left-turn lane. At Driveway 4, double-sided “No Left Turn” signage should be installed for westbound traffic on Martin Avenue at Driveway 4 and outbound traffic at Driveway 4. In addition, Driveway 4 should provide a channelizing island to limit access to right-in/right-out movements, and a double-sided “No Left Turn” sign should be posted for outbound traffic and traffic on Washington Street. Minor-leg stop control should be posted for outbound traffic at both Driveway 1 and Driveway 4. A “Right Turn Only” sign should be posted below the stop sign at Driveway 4. The study results are discussed in more detail in the *Recommendations & Conclusions* section of this report.

1. INTRODUCTION

Kimley-Horn and Associates, Inc. (Kimley-horn) was retained by Ryan Companies to perform a traffic impact study for a proposed 96,430 square-foot medical office building on the southwest corner of the intersection of Martin Avenue/Washington Street in Naperville, Illinois. In order to accommodate the development, the existing medical office building would be removed. In addition, Pam Davis Drive at Washington Street (right-in/right-out access) would be removed.

Access to the development would be provided via two driveways along Martin Avenue; two existing driveways (i.e., Driveway 2 and Driveway 3) would be removed. Located near the western boundary of the site, Driveway 1 would be shifted to the east and would provide access to the surface parking lot. In addition, Driveway 1 would provide connectivity to Pam Davis Drive. Driveway 4, located near the eastern boundary of the site, would provide right-in/right-out access to the employee-only parking garage. An aerial view of the study location and surrounding area roadway network is presented in **Exhibit 1**.

As part of this study, the existing network was analyzed to determine the current operations at the study intersections. In order to assess the site's impact on the area roadway network, site-generated trips were established and added to background traffic volumes. Existing site-generated traffic was removed from the study intersections and traffic at the intersection of Washington Street/Pam Davis Drive was redistributed based on the future configuration. Future traffic conditions were evaluated for build-plus-five conditions (Year 2029). This report presents and documents Kimley-Horn's data collection, summarizes the evaluation of existing and projected future traffic conditions on the surrounding roadways, and identifies recommendations to address the potential impact of site-generated traffic on the adjacent roadway network.



2. EXISTING CONDITIONS

Kimley-Horn reviewed the subject site including existing land uses in the surrounding area, the adjacent street system, current traffic volumes and operating conditions, lane configurations and traffic conditions at nearby intersections, and other key roadway characteristics. This section of the report details information on these existing conditions.

Area Land Uses & Connectivity

Located on the southwest corner of the intersection of Martin Avenue/Washington Street, the subject site is currently developed with a medical office building. The site is bounded by Martin Avenue to the north, Washington Street to the east, and Edward Hospital to the south and west. The surrounding area is developed with a mix of residential and institutional uses. Downtown Naperville is located approximately one-half mile north of the subject site.

Washington Street serves as a key north-south route through the City of Naperville. East-west connectivity is provided via Aurora Avenue, located approximately one-half mile north of the subject site. North-south regional connectivity is provided via IL 59, located approximately three miles to the west. East-west regional connectivity is provided via US 34 (Ogden Avenue), located less than two miles to the west and north.

Existing Roadway Characteristics

A summary of key roadways in the vicinity of the subject site is outlined below.

Martin Avenue is an east-west roadway along the northern frontage of the site. Martin Avenue extends west of Washington Street to its terminus at West Street. The Illinois Department of Transportation (IDOT) classifies Martin Avenue as a local road. Through the study area, Martin Avenue provides one travel lane in each direction. At its unsignalized T-intersection with Brom Drive, Martin Avenue operates under a free-flow condition and provides a single shared lane in each direction. At its signalized intersection with Washington Street, Martin Avenue provides separate left- and right-turn lanes. A speed limit of 30 miles per hour (MPH) is posted on Martin Avenue through the study area. Martin Avenue is under the jurisdiction of the City of Naperville.

Washington Street is a north-south roadway that runs along the eastern frontage of the site. IDOT classifies Washington Street as a Minor Arterial. Throughout the study area, Washington Street provides two travel lanes in each direction. At its signalized intersections with Martin Avenue and Osler Drive, Washington Street provides a dedicated left-turn lane and two through lanes on the south leg, and a shared through/right-turn lane and through lane on the north leg. A speed limit of 30 MPH is posted on Washington Street through the study area. Washington Street is under the jurisdiction of the City of Naperville.

Brom Drive is a north-south roadway located west of the subject site. IDOT classifies Brom Drive as a local road. Throughout the study area, Brom Drive provides one travel lane in each direction. At its unsignalized T-intersection with Martin Avenue, Brom Drive operates under minor-leg stop control with separate left- and right-turn lanes. A speed limit of 25 MPH is posted on Brom Drive through the study area. Brom Drive is under the jurisdiction of the City of Naperville.

Pam Davis Drive is an east-west roadway that runs just south of the subject site. IDOT classifies Pam Davis Drive as a local road. Throughout the study area, Pam Davis Drive provides a single travel lane in each direction. At its intersection with Washington Street, Pam Davis Drive operates under minor-leg stop control and is limited to right-in/right-out movements. A speed limit of 25 MPH is posted on Pam Davis Drive. Pam Davis Drive is under the jurisdiction of the City of Naperville.

Osler Drive is an east-west roadway located approximately one-quarter mile south of Martin Avenue. This roadway serves as a primary access to the Edward Hospital campus. IDOT classifies Osler Drive as a local road. Osler Drive provides a single travel lane in each direction. At its signalized T-intersection with Washington Street, Osler Drive provides separate left- and right-turn lanes. A speed limit of 25 MPH is posted on Osler Drive. Osler Drive is under the jurisdiction of the City of Naperville.

Driveway 1 is located near the western boundary of the subject site. Driveway 1 provides access to the surface parking lot for the existing medical office building. A single inbound lane and single outbound lane are currently provided. At the time of the data collection effort, Driveway 1 was gated and not in use.

Driveway 2 is located immediately east of Driveway 1. This access driveway provides a single inbound lane and a single outbound lane. Stop control is not posted for outbound traffic at Driveway 2; therefore, for purposes of this analysis, minor-leg stop control was assumed. A speed limit of 25 MPH was assumed for Driveway 2.

Driveway 3 is a full-access driveway located east of Driveway 2. A single inbound lane and single outbound lane are currently provided. Driveway 3 was assumed to operate under minor-leg stop control at its intersection with Martin Avenue. For purposes of this analysis, a speed limit of 25 MPH was assumed for Driveway 3.

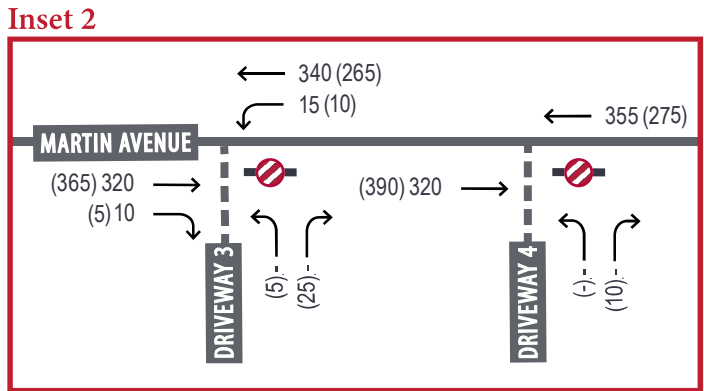
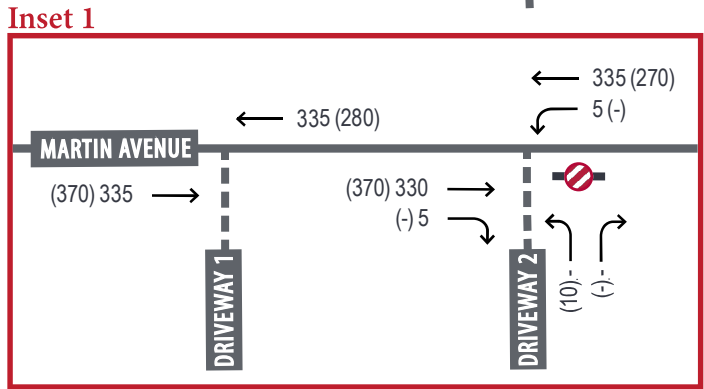
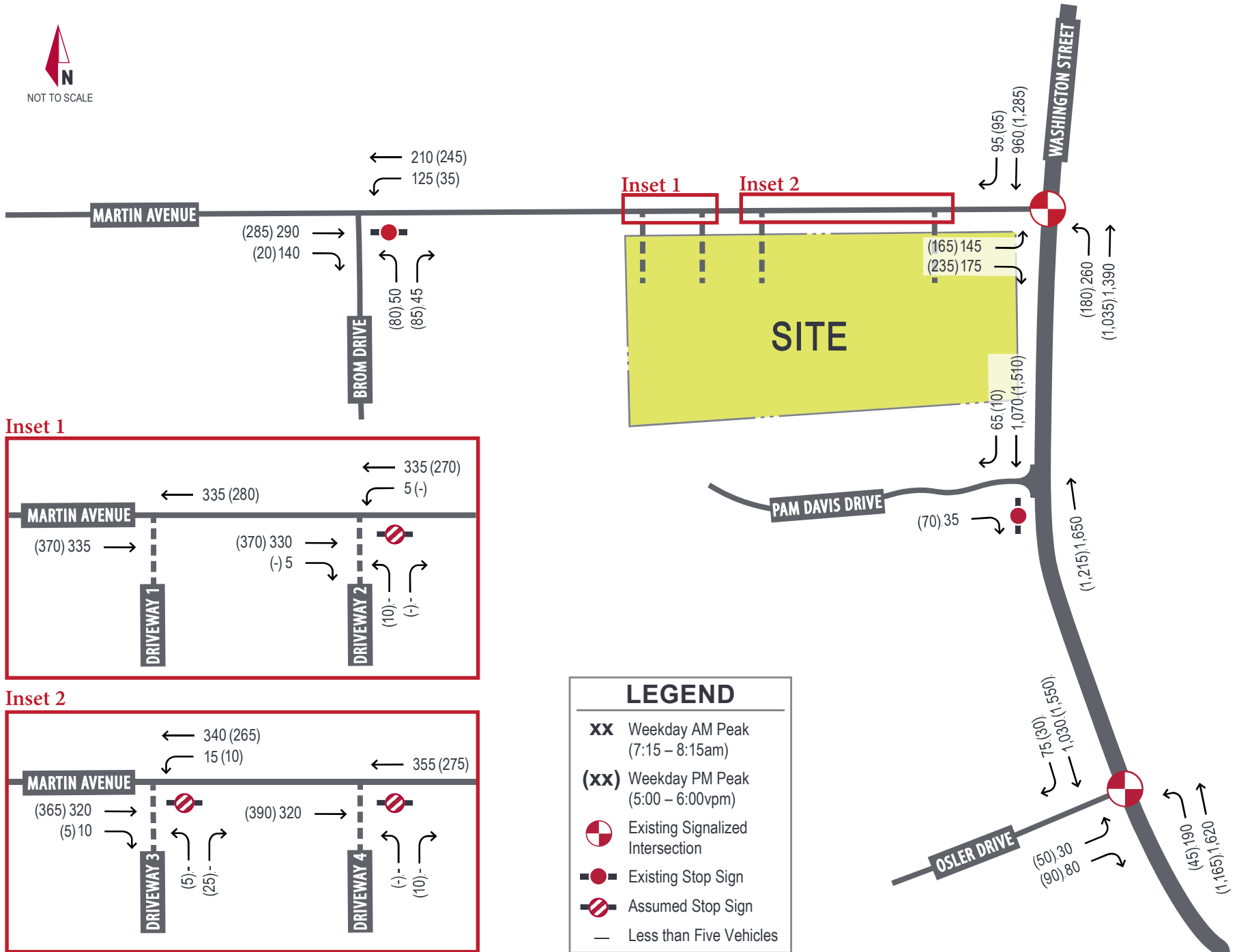
Driveway 4 is located near the eastern boundary of the subject site. Driveway 4 is an outbound-only driveway. "Do Not Enter" signage is posted at Driveway 4. For purposes of this analysis, Driveway 4 was assumed to operate under minor-leg stop control at its intersection with Martin Avenue. A speed limit of 25 MPH was assumed for Driveway 4.

Traffic Count Data

Turning movement count data was collected in March 2022 at the intersections listed below. The counts were conducted on a typical weekday from 7:00-9:00AM and 4:00-6:00PM. These time periods coincide with the typical peak traffic periods of the proposed end user as well as the surrounding street system.

- Brom Drive / Martin Avenue
- Washington Street / Martin Avenue
- Washington Street / Pam Davis Drive
- Washington Street / Osler Drive
- Martin Avenue / Driveway 1
- Martin Avenue / Driveway 2
- Martin Avenue / Driveway 3
- Martin Avenue / Driveway 4

The count data indicates that the morning peak period in the study area occurs from 7:15-8:15 AM, and the evening peak period occurs from 5:00-6:00 PM. For purposes of the analysis, the peak hour traffic volumes were rounded to the nearest multiple of five and balanced between intersections. Existing traffic volumes are presented in **Exhibit 2**. The traffic count data is provided in the appendix.



LEGEND

- xx** Weekday AM Peak (7:15 – 8:15am)
- (xx)** Weekday PM Peak (5:00 – 6:00vpm)
- Existing Signalized Intersection
- Existing Stop Sign
- Assumed Stop Sign
- Less than Five Vehicles

EXHIBIT 2
EXISTING (2022) TRAFFIC VOLUMES

Existing Capacity Analysis

Capacity analysis for the existing and future conditions was performed using Synchro Version 11. The capacity of an intersection quantifies its ability to accommodate traffic volumes and is expressed in terms of level of service (LOS), measured in average delay per vehicle. LOS grades range from A to F, with LOS A as the highest (best traffic flow and least delay), LOS E as saturated or at-capacity conditions, and LOS F as the lowest (oversaturated conditions). The lowest LOS grade typically accepted by jurisdictional transportation agencies in Northeastern Illinois is LOS D.

The LOS grades shown below, which are provided in the Transportation Research Board's Highway Capacity Manual (HCM), quantify and categorize the driver's discomfort, frustration, fuel consumption, and travel times experienced as a result of intersection control and the resulting traffic queuing. A detailed description of each LOS rating can be found in **Table 2.1**.

Table 2.1 Level of Service Grading Descriptions

Level of Service	Description ¹
A	Minimal control delay; traffic operates at primarily free-flow conditions; unimpeded movement within traffic stream.
B	Minor control delay at signalized intersections; traffic operates at a fairly unimpeded level with slightly restricted movement within traffic stream.
C	Moderate control delay; movement within traffic stream more restricted than at LOS B; formation of queues contributes to lower average travel speeds.
D	Considerable control delay that may be substantially increased by small increases in flow; average travel speeds continue to decrease.
E	High control delay; average travel speed no more than 33 percent of free flow speed.
F	Extremely high control delay; extensive queuing and high volumes create exceedingly restricted traffic flow.

¹Highway Capacity Manual, 6th Edition.

The range of control delay for each rating (as detailed in the HCM) is shown in **Table 2.2**. Because signalized intersections are expected to carry a larger volume of vehicles and stopping is required during red time, note that higher delays are tolerated for the corresponding LOS ratings.

Table 2.2 Level of Service Grading Criteria

Level of Service ¹	Average Control Delay (s/veh) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F ²	> 50	> 80

¹Highway Capacity Manual, 6th Edition

²All movements with a Volume to Capacity (v/C) ratio greater than 1 receive a rating of LOS F.

Based on these standards, capacity results were identified for the study intersections under existing conditions. For purposes of this analysis, signal timing data was obtained from the City of Naperville for the intersections of Washington Street/Martin Avenue and Washington Street/Osler Drive. Right-

turn-on-red (RTOR) movements were not included in the analysis, consistent with standard IDOT procedures.

The results of capacity analysis for existing conditions are summarized in **Table 2.3**. In this table, operation on each approach is quantified according to the average delay per vehicle and the corresponding level of service. The results for the study intersections are based on Synchro’s HCM 6th Edition reports. Copies of the Synchro reports are provided in the appendix.

Table 2.3 Existing Year (2022) Levels of Service

Intersection	Weekday AM Peak Hour		Weekday PM Peak Hour	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Brom Drive / Martin Avenue △				
Westbound (Left)	9	A	8	A
Northbound	16	C	13	B
Washington Street / Martin Avenue *				
Eastbound	49	D	47	D
Northbound	6	A	7	A
Southbound	10-	A	14	B
<i>Intersection</i>	12	B	16	B
Washington Street / Pam Davis Drive △				
Eastbound	14	B	19	C
Washington Street / Osler Drive *				
Eastbound	62	E	61	E
Northbound	3	A	3	A
Southbound	1	A	2	A
<i>Intersection</i>	5	A	5	A
Martin Avenue / Driveway 1 ¹ △				
Westbound (Left)				
Northbound				
Martin Avenue / Driveway 2 △				
Westbound (Left)	8	A	8	A
Northbound	12	B	14	B
Martin Avenue / Driveway 3 △				
Westbound (Left)	8	A	8	A
Northbound	12	B	11	B
Martin Avenue / Driveway 4 ² △				
Northbound	12	B	10+	B

* -Signalized Intersection △-Minor-Leg Stop-Controlled Intersection

¹Under existing conditions, Driveway 1 is gated and not in use; and therefore, capacity analysis was not completed.

²Under existing conditions, Driveway 4 is outbound only.

The study intersections generally operate at LOS D or better during the peak hours. At the intersection of Washington Street/Martin Avenue, the overall intersection operates at LOS B during both peak hours. The 95th percentile queue for the eastbound left-turn movement exceeds the approximately 100-foot storage lane in the evening peak hour. The estimated queue is approximately 225 feet (9 vehicles).

At the intersection of Washington Street/Osler Drive, the overall intersection operates at LOS A; however, the eastbound approach operates at LOS E. The delay estimated for the eastbound approach is attributable to signal priority given to north-south traffic on Washington Street. As a result, long periods of green time are allocated to the north-south through movements, and the minor street approach receives relatively short green times. During both peak hours, the 95th percentile queues estimated for the eastbound left-turn movement are accommodated within the existing storage lane.

The existing site access driveways currently operate with limited delay (LOS B or better) and queues during both the morning and evening peak hours.

3. DEVELOPMENT CHARACTERISTICS

This section of the report outlines the proposed site plan, summarizes site-specific traffic characteristics, defines future roadway improvements, and develops future traffic projections for analysis.

Development Characteristics

The proposed redevelopment would include a single medical office building totaling approximately 96,430 square feet. In order to accommodate the development, the existing medical office building would be removed. In addition, Pam Davis Drive east of Brom Court to Washington Street would be removed.

The proposed redevelopment would include a total of 227 parking spaces, including 177 surface parking spaces and 50 spaces in a basement-level parking garage. The parking garage would be available to employees only; patients and visitors would park in the surface parking lot. The surface parking lot would be located west and south of the proposed medical office building.

Access to the development would be provided via two driveways along Martin Avenue; two existing driveways (i.e., Driveway 2 and Driveway 3) would be removed. Driveway 1 would be shifted east of its current location and would provide access to the surface parking lot. Driveway 1 would also provide connectivity to Pam Davis Drive. Driveway 4 would provide right-in/right-out access to the employee-only parking garage. A conceptual site plan is provided in the appendix.

Trip Generation

In order to calculate the trips generated by the proposed development, data was referenced from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Trip generation data for ITE Land Use Code (LUC) 720, Medical-Dental Office Building, Within/Near Hospital Campus, was used for the analysis. The ITE data is summarized in **Table 3.1**; the detailed ITE data is provided in the appendix.

Table 3.1 ITE Trip Generation Data

ITE Land Use	Unit	Weekday		
		Daily	AM Peak Hour	PM Peak Hour
Medical-Dental Office Building, Within/Near Hospital Campus (LUC 720)	1,000 sq. ft.	$T = 35.59(X) - 127.95$ 50% in/50% out	$T = 2.72(X) - 1.53$ 81% in/19% out	$T = 3.05(X) - 7.38$ 25% in/75% out

X = 1,000 square feet

T = number of trips

The subject site is currently developed as a medical office building. The existing site-generated traffic was derived from the traffic count data collection (Exhibit 2). Site-generated traffic estimated for the proposed medical office building is summarized in **Table 3.2**. This table also summarizes existing site-generated traffic to be removed from the study intersections.

Table 3.2 Site-Generated Traffic Projections¹

Land Use	Size	Daily	Weekday					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Medical-Dental Office Building, Stand-Alone	96,430 sq. ft.	3,300	210	50	260	70	215	285
<i>Existing Site Trips (to be removed)</i>		-- ²	-35	--	-35	-15	-50	-75
Net New Site-Generated Trips		3,300	175	50	225	55	165	210

¹Daily trip generation rounded to the nearest multiple of ten. In/Out volumes rounded to the nearest multiple of five.

²Daily trip generation not collected at existing site access driveways.

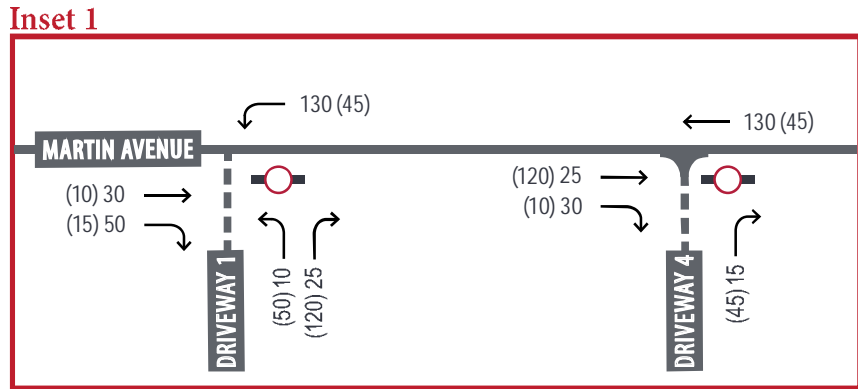
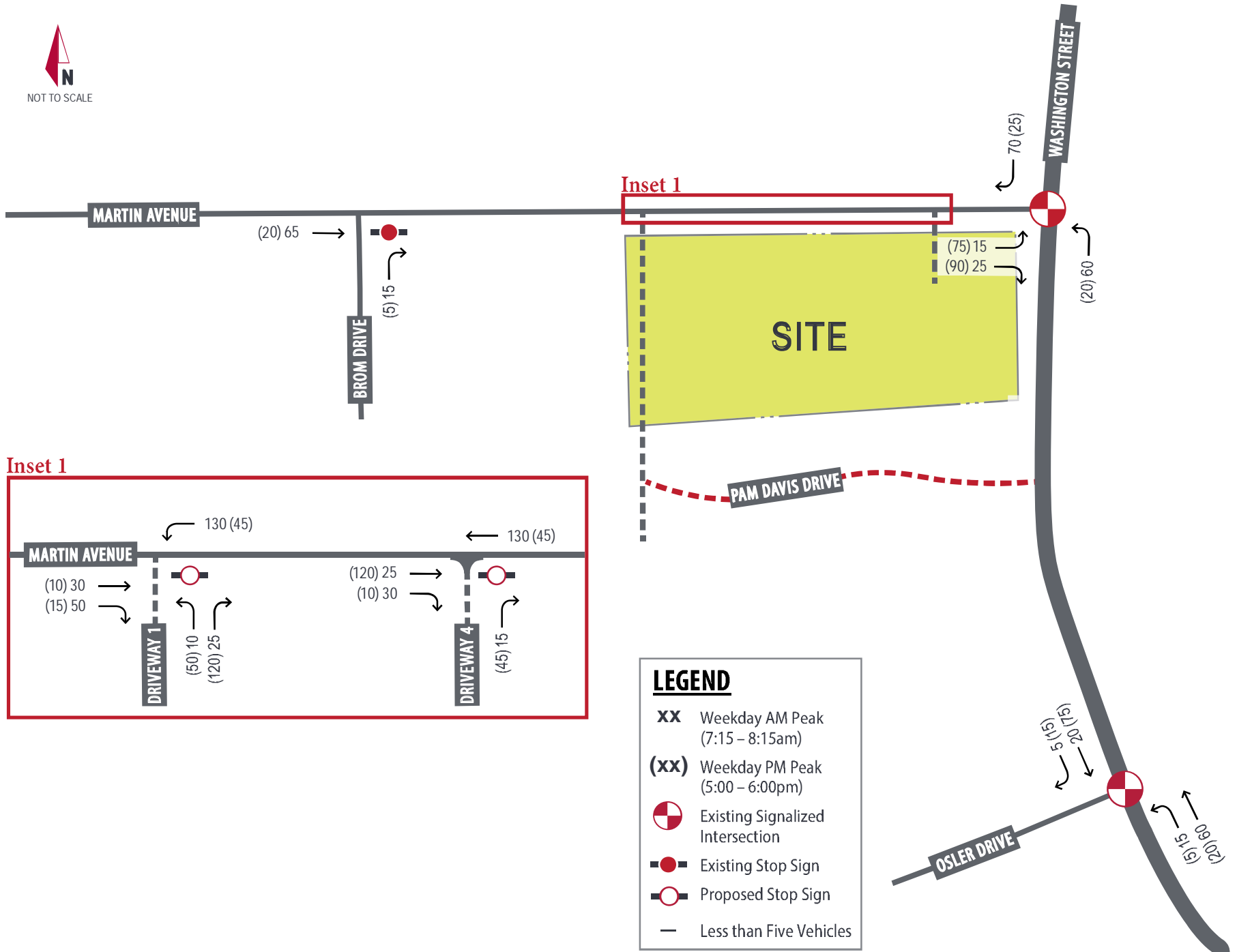
Directional Distribution

The estimated distribution of site-generated traffic on the surrounding roadway network as it approaches and departs the site is a function of several variables, such as the nature of surrounding land uses, prevailing traffic volumes/patterns, characteristics of the street system, and the ease with which motorists can travel over various sections of that system. The anticipated directional distributions are outlined in **Table 3.3**.

Table 3.3 Estimated Trip Distribution

Traveling to/from	Estimated Trip Distribution
North on Washington Street	35%
South on Washington Street	30%
West on Martin Avenue	35%
Total	100%

The site traffic assignment, representing traffic volumes associated with the proposed redevelopment at the study intersections, is a function of the estimated trip generation (Table 3.2) and the directional distribution (Table 3.3). The site trip assignment for the proposed medical office building is illustrated in **Exhibit 3**. The existing site-generated traffic to be removed from the study intersections is summarized in the appendix (**Exhibit A1**).



4. FUTURE CONDITIONS

This section of the report outlines the proposed site plan, summarized site-specific traffic characteristics, and develops future projections for analysis.

Future (2029) Traffic Projections

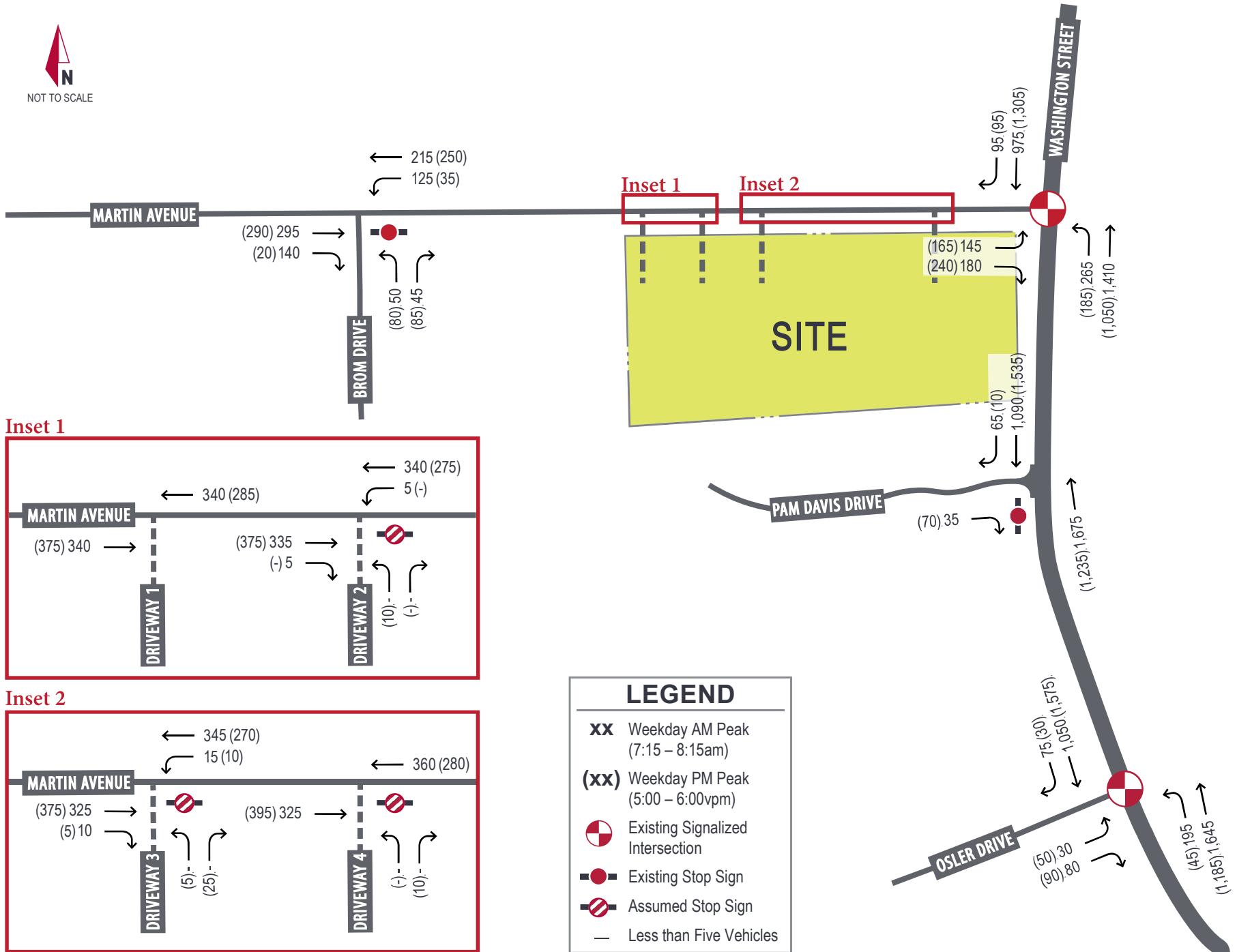
The proposed redevelopment is expected to be occupied by Year 2024; Kimley-Horn therefore evaluated future traffic conditions for a Year 2029 design horizon (build-plus-five conditions, per typical IDOT requirements). A future no-build scenario was prepared in order to assess future traffic conditions without the proposed redevelopment. Site-generated trips were then added to the no-build scenario to analyze the redevelopment's impact on the study intersections.

Future No-Build Traffic Projections

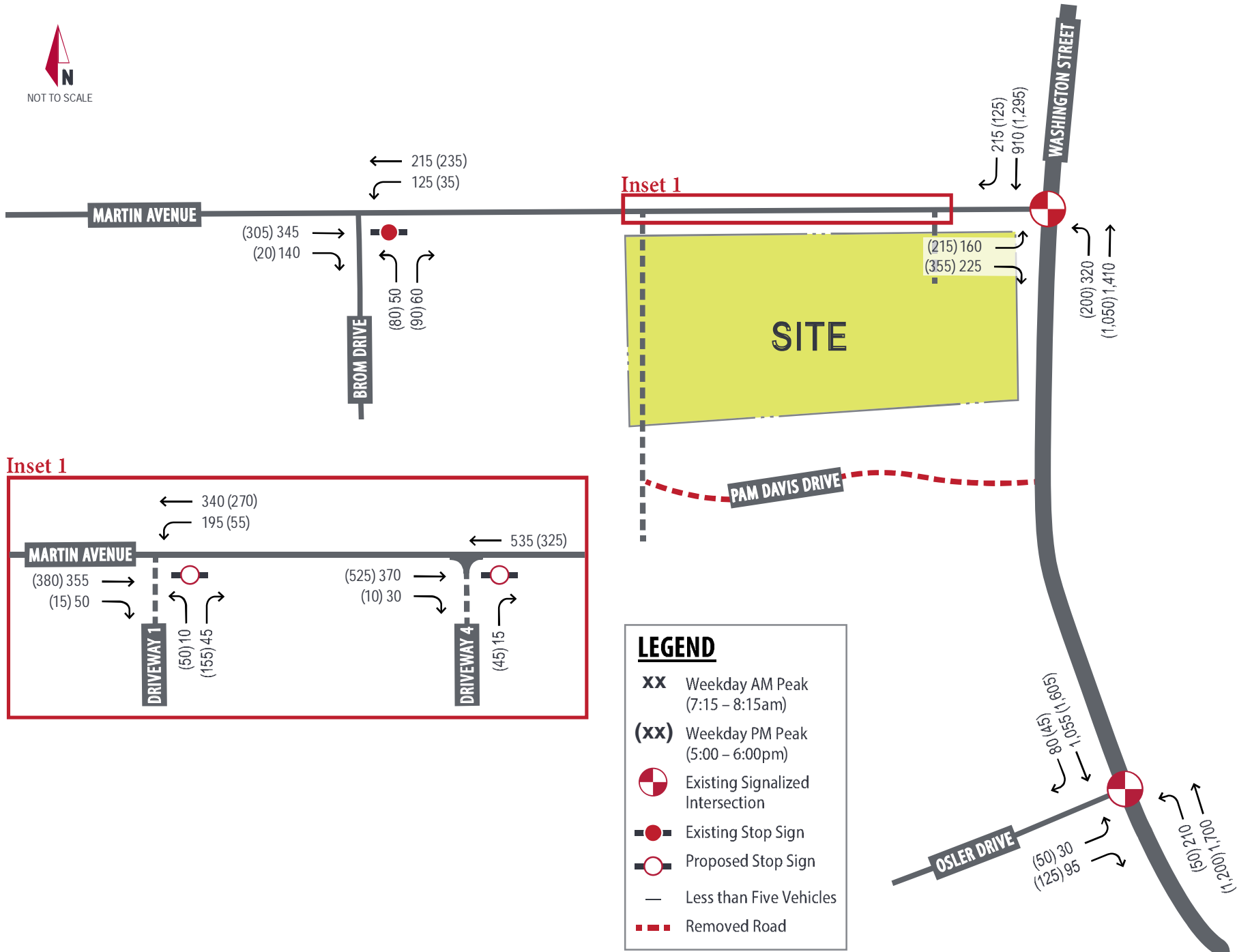
Background traffic volumes were estimated using data from the Chicago Metropolitan Agency for Planning (CMAP). Based on information received from CMAP, traffic growth on the roadway network is projected at a compounded rate of roughly 0.23 percent annually through Year 2050. Therefore, an annual growth rate of 0.23 percent was applied to all study intersections through Year 2029 to account for background traffic growth. The Future (2029) No-Build traffic projections are presented in **Exhibit 4**. An official letter from CMAP documenting the projected Year 2050 traffic volume on the roadway network is included in the appendix.

Future Build Traffic Projections

To develop future build traffic projections, site-generated traffic (Exhibit 3) was added to the Future (2029) No-Build traffic projections (Exhibit 4). Due to the planned demolition of the existing medical office building, existing site-generated traffic summarized in Table 3.2 was removed from the study intersections. An exhibit depicting existing site-generated traffic removed from the study intersections is presented in the appendix (**Exhibit A1**). In addition, existing traffic at the intersection of Washington Street/Pam Davis Drive was redistributed to reflect the future access to Pam Davis Drive via Driveway 1. An exhibit depicting the redistributed Pam Davis Drive traffic is provided in the appendix (**Exhibit A2**). The resulting Future (2029) Build traffic projections are illustrated in **Exhibit 5**.



LEGEND	
xx	Weekday AM Peak (7:15 – 8:15am)
(xx)	Weekday PM Peak (5:00 – 6:00vpm)
	Existing Signalized Intersection
	Existing Stop Sign
	Assumed Stop Sign
—	Less than Five Vehicles



Turn Lane Warrants

For the analysis of Future (2029) Build traffic conditions, turn lane warrants were evaluated for the study intersections using guidelines in the IDOT *Bureau of Design and Environment (BDE) Manual*. A summary of the turn lane warrant analysis is outlined below; copies of the turn lane warrants are included in the appendix.

Martin Avenue / Brom Drive

- A right-turn lane was evaluated on the west leg of Martin Avenue at Brom Drive. The IDOT *BDE Manual* does not provide specific volume guidance for two-lane facilities with design speeds below 50 MPH (Martin Avenue has a design speed of 35 MPH; posted speed limit is 30 MPH). However, per the *BDE Manual*, where the design speed is below 50 MPH an adjustment of 20 vehicles should be applied to the right-turn volume. Based on a review of the existing traffic volumes at Martin Avenue/Brom Drive, a right-turn lane is warranted under existing conditions (Exhibit 2). As there are no known improvement plans for this intersection, a right-turn lane was not included in the analysis of future conditions.
- A left-turn lane was evaluated on the east leg of this intersection. Based on IDOT criteria, a left-turn lane is also warranted under existing traffic volumes (Exhibit 2). Again, there are no known improvement plans; and therefore, a left-turn lane was not included in the analysis of future conditions.

Martin Avenue / Driveway 1

- A right-turn lane was evaluated on the west leg of Martin Avenue at Driveway 1. Based on a review of the build traffic projections (Exhibit 5), a right-turn lane is not warranted; and therefore, was not included in the analysis of future conditions.
- A left-turn lane was evaluated on the east leg of this intersection. Based on IDOT guidelines, a left-turn lane is warranted under the future build condition.
 - The westbound left-turn lane should provide 125 feet of storage and a 155-foot back-to-back taper with the existing eastbound left-turn lane on Martin Avenue at Washington Street. The storage for the existing eastbound left-turn lane should be extended from 100 feet to 125 feet.
 - The approximately 200-foot parking box (8 spaces) on the north side of Martin Avenue should be removed to accommodate the turn lane. In addition, the approximately 95-foot parking box (4 spaces) on the south side of Martin Avenue should be removed.

Martin Avenue / Driveway 4

- A right-turn lane was evaluated on the west leg of Martin Avenue at Driveway 4. Based on a review of the build traffic projections (Exhibit 5), a right-turn lane is not warranted; and therefore, was not included in the analysis of future conditions.
- Driveway 4 is limited to right-in/right-out movements only; and therefore, a left-turn lane was not considered.

Washington Street / Martin Avenue and Washington Street / Osler Drive

- A right-turn lane was evaluated on the north leg of Washington Street at Martin Avenue. As noted above, the IDOT *BDE Manual* provides an adjustment for roads with design speeds lower than 50 MPH (Washington Street has a design speed of 35 MPH; posted speed limit is

30 MPH). Future (2029) Build traffic volumes (Exhibit 5) meet the criteria for installation of a southbound right-turn lane. However, the southbound approach is projected to operate at LOS B under future conditions. A review of the Washington Street corridor reveals that right-turn lanes are generally not provided; the existing geometry is consistent with other signalized intersections along the corridor. Therefore, the existing geometry was assumed for the future conditions analysis.

Washington Street / Osler Drive

- A right-turn lane was evaluated on the north leg of Washington Street at its intersection with Osler Drive. Future (2029) Build traffic volumes (Exhibit 5) do not meet the criteria for installation of a southbound right-turn lane.

Future (2029) Capacity Analysis

Capacity results were identified for the study intersection under Future (2029) No-Build and Build conditions. The results of the capacity analysis are summarized in **Table 4.1**. Consistent with the existing conditions analysis, the results for the study intersections are based on Synchro’s HCM 6th Edition reports. Copies of these results are included in the appendix.

Table 4.1 Future (2029) Levels of Service

Intersection	No-Build				Build			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Brom Drive / Martin Avenue △								
Westbound (Left)	9	A	8	A	9	A	8	A
Northbound	16	C	13	B	17	C	13	B
Washington Street / Martin Avenue ★								
Eastbound	48	D	47	D	45	D	47	D
Northbound	6	A	8	A	9	A	12	B
Southbound	10+	B	14	B	14	B	21	C
<i>Intersection</i>	<i>12</i>	<i>B</i>	<i>16</i>	<i>B</i>	<i>15</i>	<i>B</i>	<i>22</i>	<i>C</i>
Washington Street / Pam Davis Drive △								
Eastbound	14	B	19	C				
Washington Street / Osler Drive ★								
Eastbound	62	E	61	E	62	E	59	E
Northbound	3	A	3	A	4	A	4	A
Southbound	1	A	2	A	1	A	1	A
<i>Intersection</i>	<i>5</i>	<i>A</i>	<i>5</i>	<i>A</i>	<i>5</i>	<i>A</i>	<i>6</i>	<i>A</i>
Martin Avenue / Driveway 1 ¹								
Westbound (Left)					9	A	8	A
Northbound					14	B	14	B
Martin Avenue / Driveway 2 △								
Westbound (Left)	8	A	8	A				
Northbound	12	B	14	B				
Martin Avenue / Driveway 3 △								
Westbound (Left)	8	A	8	A				
Northbound	12	B	11	B				
Martin Avenue / Driveway 4 △								
Northbound (Right)	12	B	10+	B	10-	A	10+	B

★ -Signalized Intersection ▲ - All-Way Stop-Controlled Intersection △ -Minor-Leg Stop-Controlled Intersection

¹Driveway 1 is gated off and not used in existing conditions, and therefore was not analyzed in a no-build scenario. Likewise, entry to Driveway 4 is not permitted in existing conditions and was not analyzed in the no-build.

²Pam Davis Drive, Driveway 2, and Driveway 3 will be removed as part of the build-scenario, and therefore were not analyzed in the build scenario.

³All driveways analyzed as stop-controlled as a conservative estimate.

With the addition of background traffic growth and site-generated traffic, the study area intersections are projected to experience very little change in delay with the majority of movements and approaches projected to operate at the same LOS as compared to existing conditions. At the intersection of Washington Street/Martin Avenue, the southbound approach in the AM peak hour is projected to operate at LOS B in the future conditions as compared to LOS A under existing conditions.

Similar to existing conditions, the delay projected for the eastbound approach at Washington Street/Osler Drive is attributable to signal priority given to north-south traffic on Washington Street. As a result, long periods of green time are allocated to the north-south through movements, and the minor street approach receives relatively short green times. The addition of site-generated traffic is not expected to materially impact delay or 95th percentile queues.

The proposed site access driveways are expected to operate with limited delay and queues. At the intersection of Martin Avenue/Driveway 1, the 95th percentile queue projected for the westbound left-turn movement is 25 feet (1 vehicle) or less during both peak hours. Therefore, the proposed turn lane is expected to accommodate projected queues; spillback to the westbound through travel lane is not anticipated. For the outbound left- and right-turn movements, the projected 95th percentile queue is approximate 25 feet (1 vehicle) or less during both peak hours. The proposed 115-foot storage lane for the outbound left-turn movement is expected to accommodate site-generated traffic; queue spillback to Pam Davis Drive is not anticipated. At the intersection of Martin Avenue/Driveway 4 (right-in/right-out access), limited delay and queues are projected during both the morning and evening peak hours.

5. RECOMMENDATIONS & CONCLUSIONS

Based on Kimley-Horn's review of the proposed site plan and evaluation of existing and future traffic conditions, the study intersections are projected to adequately accommodate the proposed development with the implementation of the following improvements:

- Martin Avenue / Driveway 1
 - Install a westbound left-turn lane on Martin Avenue at Driveway 1. The turn lane should provide 125 feet of storage and a 155-foot back-to-back taper with the existing eastbound left-turn lane on Martin Avenue at Washington Street.
 - The existing storage for the eastbound left-turn lane on Martin Avenue at Washington Street should be extended from 100 feet to 125 feet.
 - The approximately 200-foot parking box (8 spaces) on the north side of Martin Avenue should be removed to accommodate the turn lane. In addition, the approximately 95-foot parking box (4 spaces) on the south side of Martin Avenue should be removed.
 - Provide a single inbound lane and separate outbound left- and right-turn lanes.
 - The outbound left-turn lane should provide 115 feet of storage.
 - Install minor-leg stop control for outbound traffic at Driveway 1.

- Martin Avenue / Driveway 4
 - Provide a raised channelizing island to limit access to right-in/right-out movements. Provide a single inbound lane and a single outbound lane.
 - Install a double-sided "No Left Turn" sign for outbound traffic at Driveway 4 and westbound traffic on Martin Avenue.
 - Install minor-leg stop control for outbound traffic at Driveway 4; a "Right Turn Only" should be posted below the stop sign.

Regardless of the final configuration of the intersection geometrics, several additional items should be taken into consideration when preparing site and roadway improvement plans for the subject development. As the site design progresses, care should be taken with landscaping, signage, and monumentation at the site access locations to ensure that adequate horizontal sight distance is maintained. If alterations to the site plan or land use should occur, changes to the analysis provided within this traffic impact study may be needed.

APPENDIX

Conceptual Site Plan

Exhibit A1 Existing Site Traffic Removed

Exhibit A2 Pam Davis Drive Redistribution

Traffic Count Data

Existing Year (2022) Capacity Reports

CMAP Year 2050 Traffic Projections

Future (2029) Turn Lane Warrants


Data from ITE Trip Generation Manual, 11th Edition


Future Year (2029) No-Build Capacity Reports

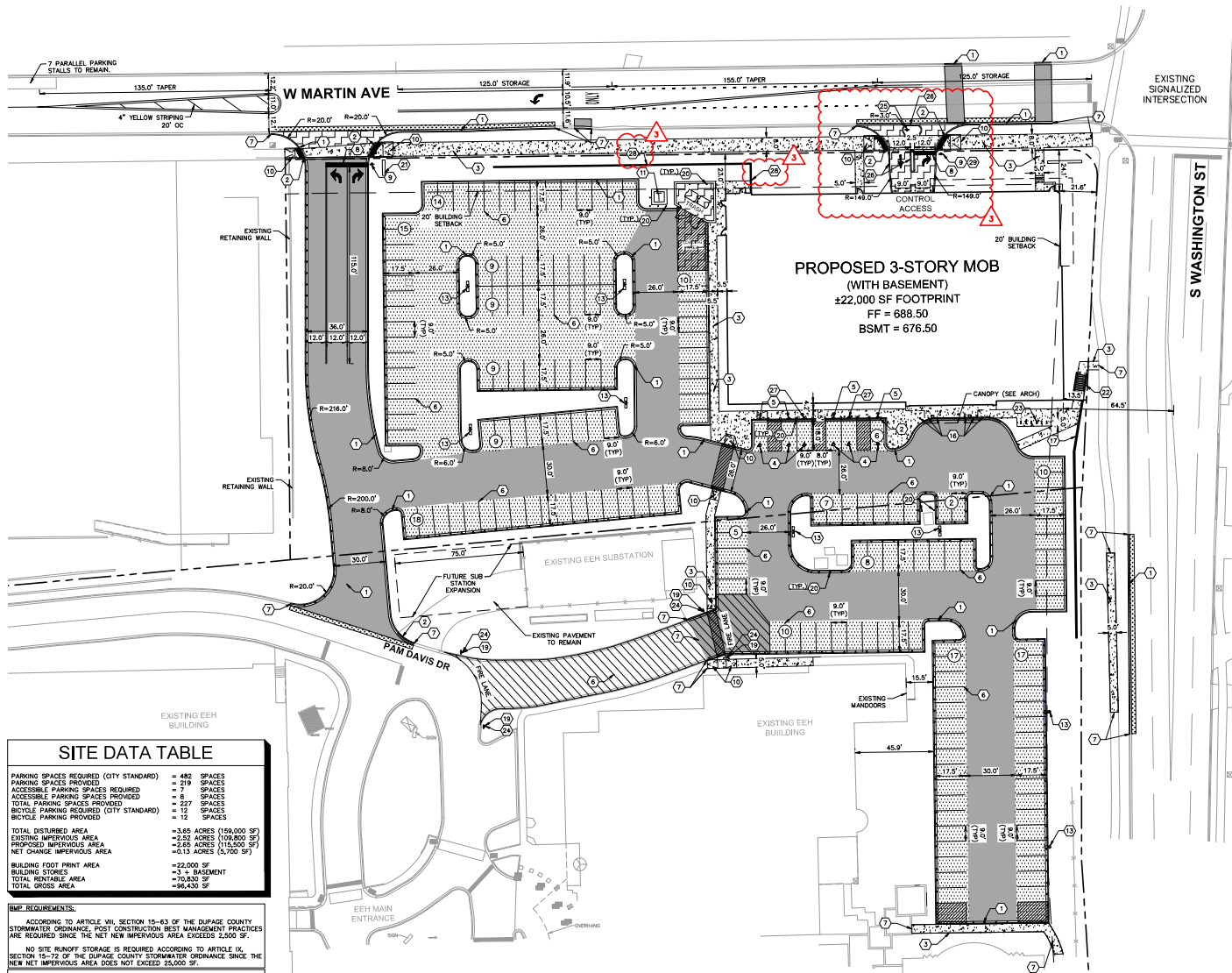
Future Year (2029) Build Capacity Reports

CONCEPTUAL SITE PLAN

Drawing name: \\USL\USL\1680107\2024\KHA\Naperville_IL_1680107\1680107_Site_4_PAVING_SITING_CD - SITE & PAVING PLAN.dwg, C2.0, Oct 31, 2023, 3:29pm, N. McWhorter
 This document, together with the contract and design permit(s) herein, is an instrument of service, and shall be held in full faith and credit for the specific project and site, for which it was prepared. Plans of and proper reference to the specific project and site, for which it was prepared, shall be without liability to the drafter and Association, Inc.


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 800-892-0123


 GRAPHIC SCALE IN FEET
 0 15 30 60











**PROPOSED 3-STORY MOB
 (WITH BASEMENT)**
 ±22,000 SF FOOTPRINT
 FF = 688.50
 BSMT = 676.50

- ### GENERAL NOTES
1. ALL DIMENSIONS REFER TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
 2. BUILDING DIMENSIONS ARE TO THE OUTSIDE FACE OF BUILDING UNLESS OTHERWISE NOTED.
 3. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS TO VERIFY ALL BUILDING DIMENSIONS.
 4. RADI ADJACENT TO PARKING STALL AND NOT DIMENSIONED ON THIS PLAN SHALL BE 3'-FEET, TYPICAL.
 5. REFER TO ARCHITECTURAL PLANS FOR MONUMENT SIGN DETAILS. SEE MEP PLANS FOR SITE ELECTRICAL DRAWINGS.
 6. ALL PROPOSED ON-SITE STRIPINGS SHALL BE PAINTED UNLESS OTHERWISE NOTED.

- ### KEY NOTES
- 1) 86.12 CONCRETE CURB AND GUTTER, TYP. (SEE DETAILS)
 - 2) DEPRESSED CURB AND GUTTER
 - 3) CONCRETE SIDEWALK, TYP. (SEE DETAILS)
 - 4) ACCESSIBLE PAVEMENT MARKINGS, TYP. (SEE DETAILS)
 - 5) ACCESSIBLE PARKING SIGN, TYP. (MUTCD R7-8 & R7-10)
 - 6) 4" WIDE PAINTED SOLID LINE, TYP.
 - 7) CONNECT TO EXISTING PAVEMENT, SIDEWALK, CURB, TYP.
 - 8) 24" WIDE STOP BAR, TYP. (SEE DETAILS)
 - 9) STOP SIGN, TYP. (MUTCD R1-1)
 - 10) ACCESSIBLE RAMP W/ DETECTABLE WARNING PANELS (SEE DETAILS)
 - 11) TRANSFORMER PAD (FOR REFERENCE ONLY)
 - 12) MONUMENT SIGN
 - 13) LIGHT POLES SHOWN FOR COORDINATION ONLY (SEE SITE LIGHTING PLANS)
 - 14) SCREEN WALL (SEE ARCHITECTURAL PLANS FOR DETAILS)
 - 15) 3-FT TRANSITION CURB
 - 16) DECORATIVE BOLLARD (REFERENCE ARCH PLANS)
 - 17) SITE RETAINING (ROCKWOOD CLASSIC 8 STRAIGHT SPLIT CHARCOAL BLOCK)
 - 18) ARCHITECTURAL RETAINING WALL (SEE ARCHITECTURAL PLANS FOR DETAILS)
 - 19) FIRE LANE SIGN
 - 20) BOLLARD, TYP. (SEE DETAILS)
 - 21) WAY FINDING SIGN
 - 22) STAIRS (SEE ARCHITECTURAL PLANS FOR DETAILS)
 - 23) BIKE PARKING (HOOP RACK - PARKS 2 BIKES EACH)
 - 24) DO NOT ENTER SIGN
 - 25) DOUBLE SIDED "NO LEFT TURN" SIGN (MUTCD R3-2)
 - 26) 6" BARRIER CURB
 - 27) VAN ACCESSIBLE PARKING SIGN (SEE C6.0 FOR DETAILS)
 - 28) CAST IN PLACE CONCRETE WALL (SEE STRUCTURAL PLANS FOR DETAILS)
 - 29) "RIGHT TURN ONLY" SIGN (PLACED BELOW STOP SIGN)

PAVING AND CURB LEGEND

	STANDARD DUTY ASPHALT PAVEMENT SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
	HEAVY DUTY ASPHALT PAVEMENT SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
	CONCRETE SIDEWALK SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
	HEAVY DUTY CONCRETE PAVEMENT SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
	8" MILL AND OVERLAY SEE CONSTRUCTION DETAILS FOR PAVEMENT SECTION
	STANDARD PITCH CONCRETE CURB AND GUTTER
	REVERSE PITCH CONCRETE CURB AND GUTTER
	CONCRETE DEPRESSED CURB AND GUTTER

SITE DATA TABLE

PARKING SPACES REQUIRED (CITY STANDARD)	= 482 SPACES
PARKING SPACES PROVIDED	= 219 SPACES
ACCESSIBLE PARKING SPACES REQUIRED	= 7 SPACES
ACCESSIBLE PARKING SPACES PROVIDED	= 6 SPACES
TOTAL PARKING SPACES PROVIDED	= 227 SPACES
BICYCLE PARKING REQUIRED (CITY STANDARD)	= 12 SPACES
BICYCLE PARKING PROVIDED	= 12 SPACES
TOTAL DISTURBED AREA	= 3.65 ACRES (159,000 SF)
EXISTING IMPERVIOUS AREA	= 2.52 ACRES (109,800 SF)
PROPOSED IMPERVIOUS AREA	= 2.69 ACRES (118,500 SF)
NET CHANGE IMPERVIOUS AREA	= 0.13 ACRES (5,700 SF)
BUILDING FOOT PRINT AREA	= 22,000 SF
BUILDING STORES	= 3 + BASEMENT
TOTAL RETAILABLE AREA	= 70,800 SF
TOTAL GROSS AREA	= 96,430 SF

SFP REQUIREMENTS:

ACCORDING TO ARTICLE VII, SECTION 15-63 OF THE DUPAGE COUNTY STORMWATER ORDINANCE, POST CONSTRUCTION BEST MANAGEMENT PRACTICES ARE REQUIRED SINCE THE NET NEW IMPERVIOUS AREA EXCEEDS 2,500 SF.

NO SITE RUNOFF STORAGE IS REQUIRED ACCORDING TO ARTICLE IV, SECTION 15-72 OF THE DUPAGE COUNTY STORMWATER ORDINANCE SINCE THE NEW NET IMPERVIOUS AREA DOES NOT EXCEED 25,000 SF.

IMPERVIOUS

	EXISTING (2.52 AC)	EXISTING (112,800 SF)
BUILDING	0.35 AC	15,246 SF
PARKING LOT	1.72 AC	74,923 SF
DRIVEWAY	0.30 AC	13,088 SF
SIDEWALK	0.22 AC	9,483 SF
	PROPOSED (2.65 AC)	PROPOSED (115,434 SF)
BUILDING	0.55 AC	23,958 SF
PARKING LOT	1.58 AC	68,825 SF
DRIVEWAY	0.32 AC	13,939 SF
SIDEWALK	0.20 AC	8,712 SF

Kimley-Horn
 CIVIL ENGINEERS & ARCHITECTS, INC.
 500 W. HARRIS AVENUE, SUITE 500
 NAPERVILLE, IL 60563
 WWW.KIMLEY-HORN.COM

RYAN

SITE & PAVING PLAN

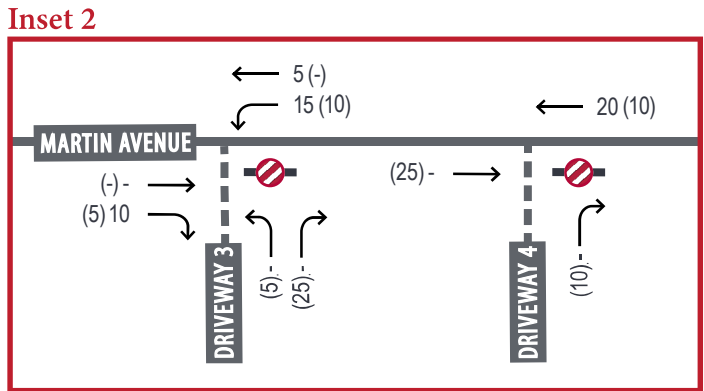
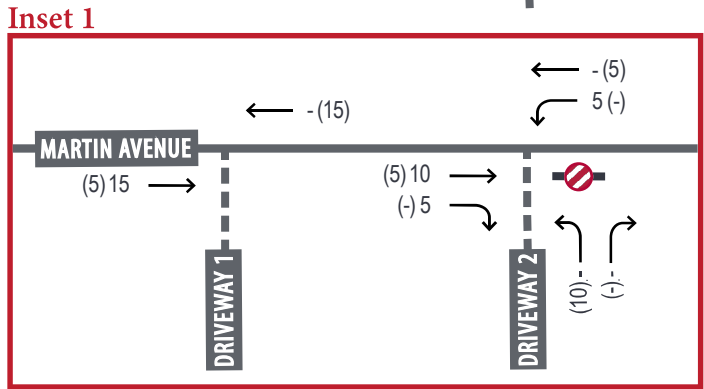
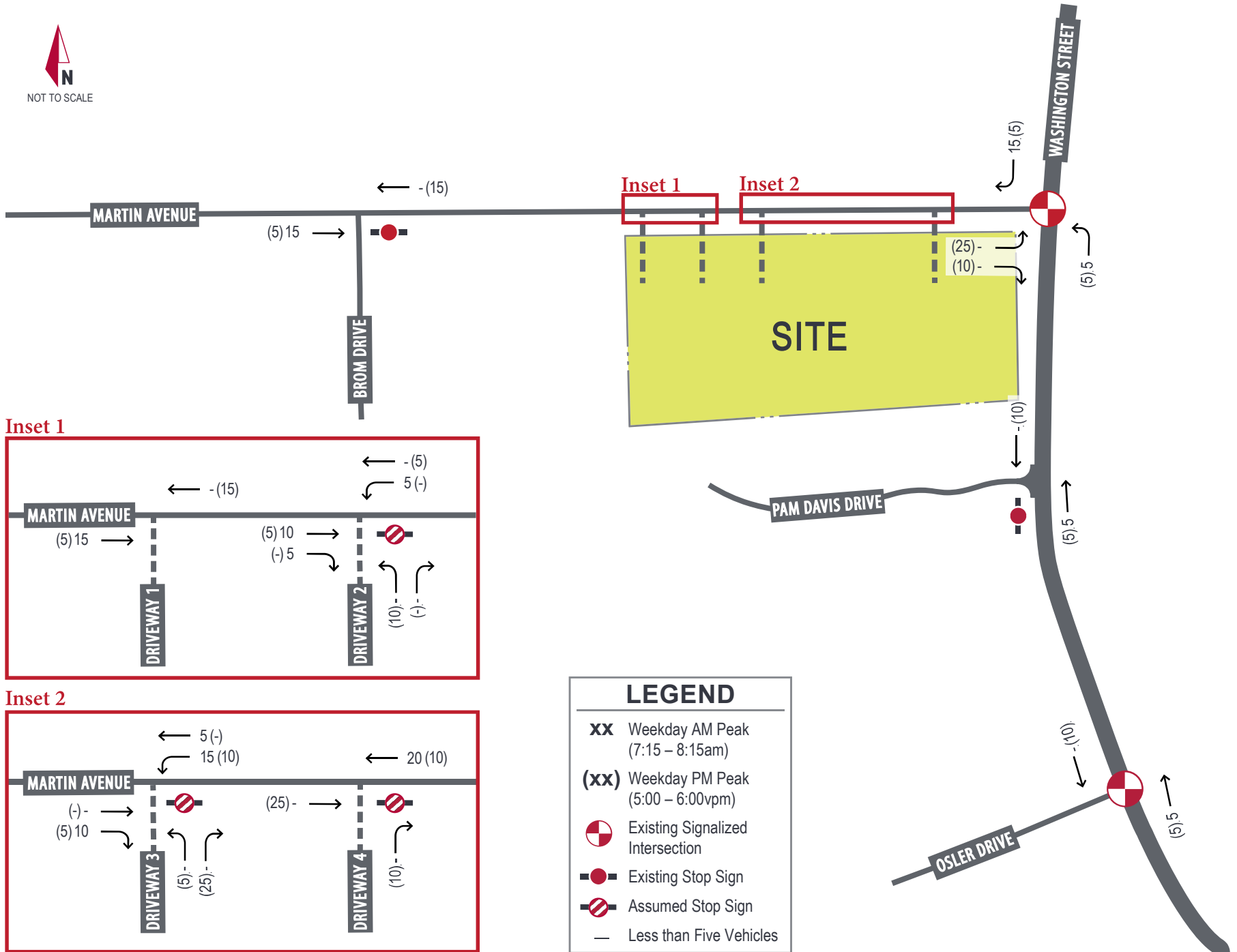
NAPERVILLE MOB
 10 MARTIN AVE
 NAPERVILLE, IL 60540

REVISED PER CITY COMMENTS	7/15/2023	MWH
REVISED PER CITY COMMENTS	10/10/2023	MWH
REVISED PER CITY COMMENTS	10/10/2023	MWH
REVISIONS	DATE	BY

SCALE: AS NOTED
 DESIGNED BY: SWM
 DRAWN BY: MWH
 CHECKED BY: SWM

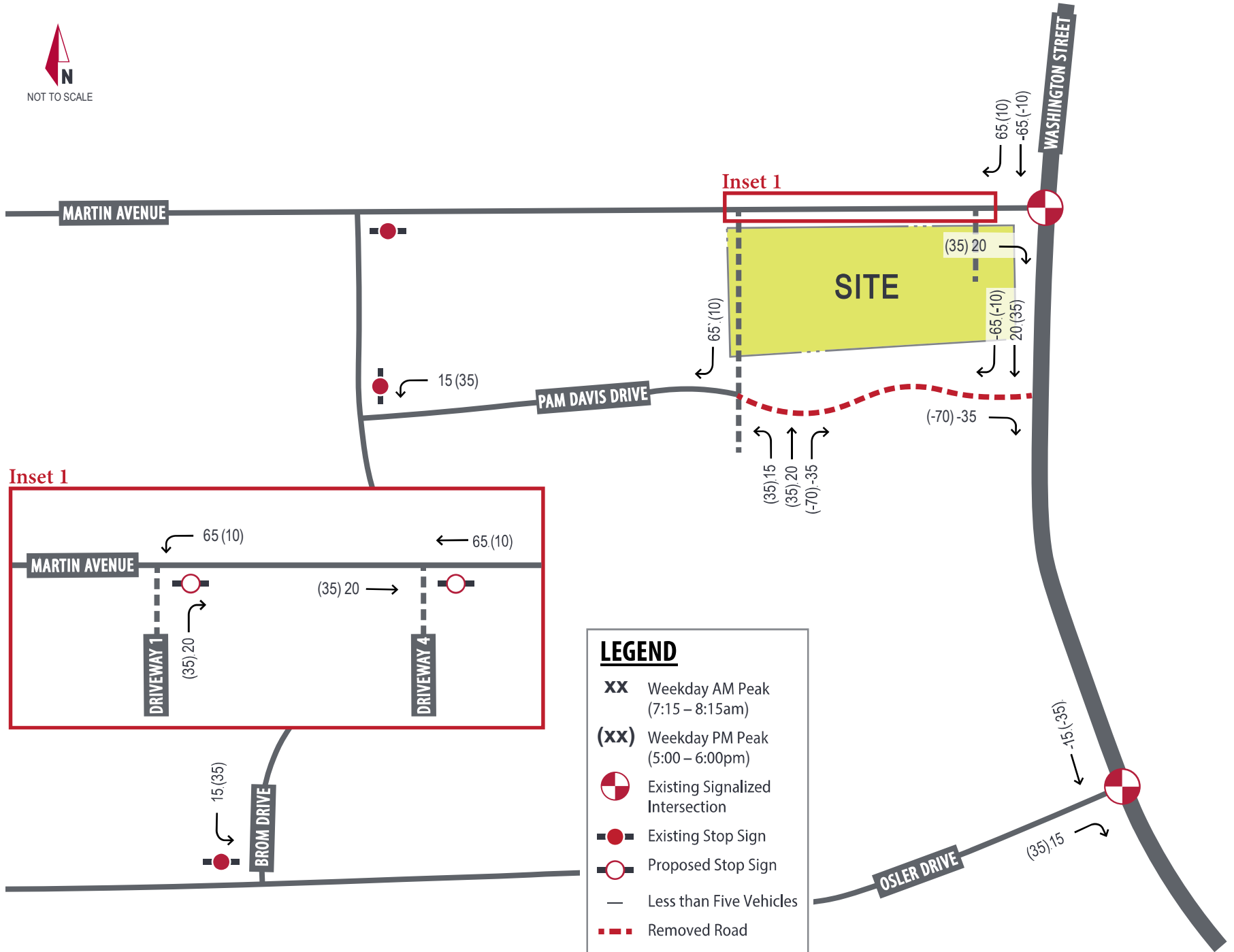
ORIGINAL ISSUE: 4/21/22
 KHA PROJECT NO. 16801017
 SHEET NUMBER C2.0

EXHIBIT A1 EXISTING SITE TRAFFIC – REMOVED



LEGEND	
xx	Weekday AM Peak (7:15 – 8:15am)
(xx)	Weekday PM Peak (5:00 – 6:00vpm)
	Existing Signalized Intersection
	Existing Stop Sign
	Assumed Stop Sign
—	Less than Five Vehicles

EXHIBIT A2 PAM DAVIS DRIVE REDISTRIBUTION



TRAFFIC COUNT DATA

1_Martin Avenue & Brom Drive - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929945, Location: 41.763008, -88.153309



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound					Martin Westbound					Brom Northbound					Int
	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	
Time																
2022-03-17 7:15AM	62	27	0	89	0	21	60	0	81	0	11	5	0	16	0	186
7:30AM	77	38	0	115	0	29	83	0	112	0	16	14	0	30	0	257
7:45AM	72	52	0	124	0	41	36	0	77	0	12	11	0	23	0	224
8:00AM	75	22	0	97	0	33	26	0	59	0	13	14	0	27	0	183
Total	286	139	0	425	0	124	205	0	329	0	52	44	0	96	0	850
% Approach	67.3%	32.7%	0%	-	-	37.7%	62.3%	0%	-	-	54.2%	45.8%	0%	-	-	-
% Total	33.6%	16.4%	0%	50.0%	-	14.6%	24.1%	0%	38.7%	-	6.1%	5.2%	0%	11.3%	-	-
PHF	0.929	0.668	-	0.857	-	0.756	0.617	-	0.734	-	0.813	0.786	-	0.800	-	0.827
Lights	279	136	0	415	-	124	202	0	326	-	49	44	0	93	-	834
% Lights	97.6%	97.8%	0%	97.6%	-	100%	98.5%	0%	99.1%	-	94.2%	100%	0%	96.9%	-	98.1%
Articulated Trucks	0	0	0	0	-	0	1	0	1	-	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0%	0%	-	0%	0.5%	0%	0.3%	-	0%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	7	3	0	10	-	0	2	0	2	-	3	0	0	3	-	15
% Buses and Single-Unit Trucks	2.4%	2.2%	0%	2.4%	-	0%	1.0%	0%	0.6%	-	5.8%	0%	0%	3.1%	-	1.8%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1_Martin Avenue & Brom Drive - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

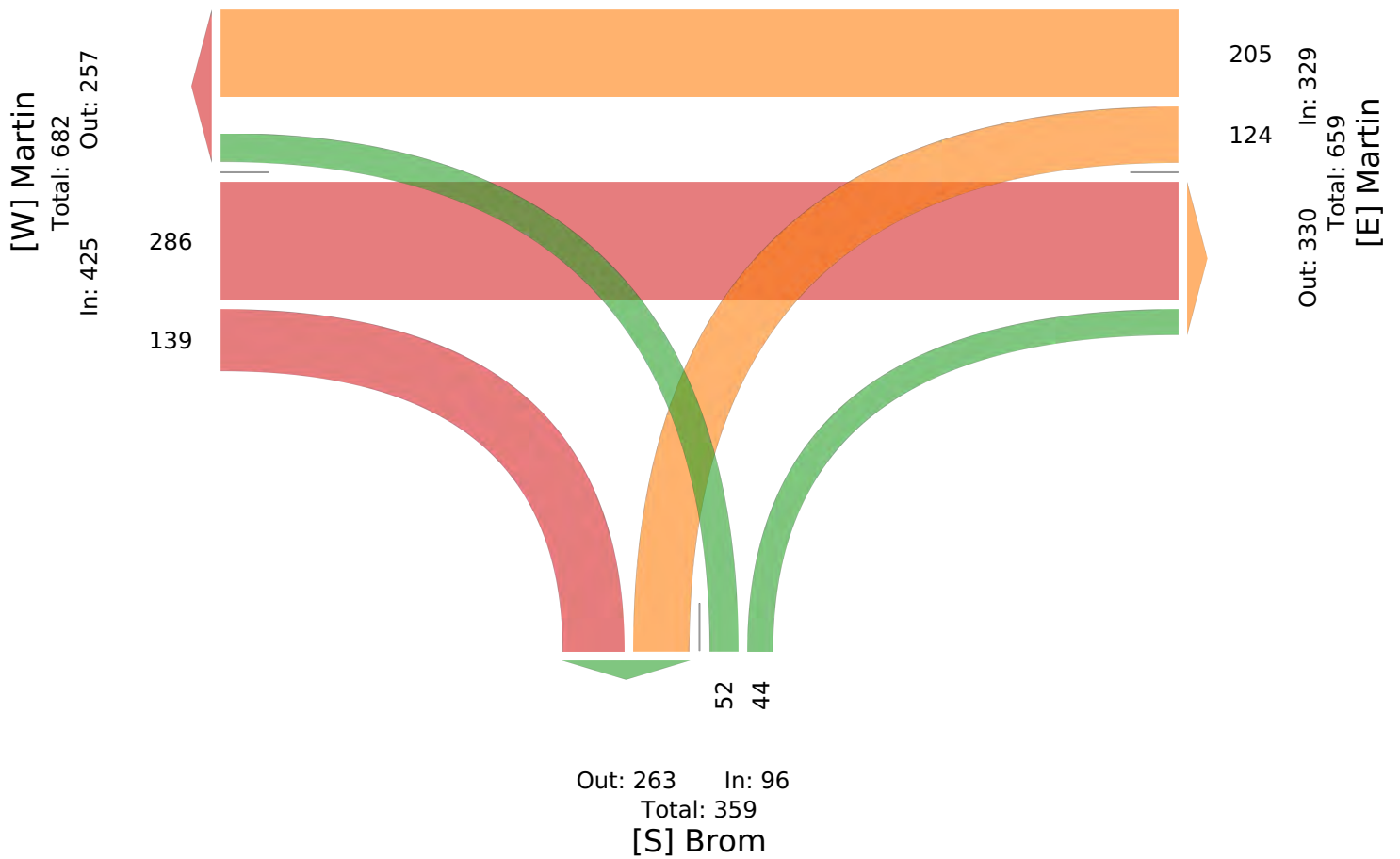
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929945, Location: 41.763008, -88.153309



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



1_Martin Avenue & Brom Drive - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929945, Location: 41.763008, -88.153309



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound					Martin Westbound					Brom Northbound					Int
	T	R	U	App	Ped*	L	T	U	App	Ped*	L	R	U	App	Ped*	
Time																
2022-03-17 5:00PM	66	4	0	70	0	5	59	0	64	0	28	27	0	55	0	189
5:15PM	83	4	0	87	0	6	45	0	51	0	21	28	0	49	1	187
5:30PM	67	5	0	72	0	9	72	0	81	0	18	18	0	36	0	189
5:45PM	66	6	0	72	0	13	70	0	83	0	15	10	0	25	3	180
Total	282	19	0	301	0	33	246	0	279	0	82	83	0	165	4	745
% Approach	93.7%	6.3%	0%	-	-	11.8%	88.2%	0%	-	-	49.7%	50.3%	0%	-	-	-
% Total	37.9%	2.6%	0%	40.4%	-	4.4%	33.0%	0%	37.4%	-	11.0%	11.1%	0%	22.1%	-	-
PHF	0.849	0.792	-	0.865	-	0.635	0.851	-	0.848	-	0.732	0.741	-	0.750	-	0.984
Lights	280	17	0	297	-	33	244	0	277	-	80	83	0	163	-	737
% Lights	99.3%	89.5%	0%	98.7%	-	100%	99.2%	0%	99.3%	-	97.6%	100%	0%	98.8%	-	98.9%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	2	2	0	4	-	0	1	0	1	-	2	0	0	2	-	7
% Buses and Single-Unit Trucks	0.7%	10.5%	0%	1.3%	-	0%	0.4%	0%	0.4%	-	2.4%	0%	0%	1.2%	-	0.9%
Bicycles on Road	0	0	0	0	-	0	1	0	1	-	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	-	0%	0.4%	0%	0.4%	-	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1_Martin Avenue & Brom Drive - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

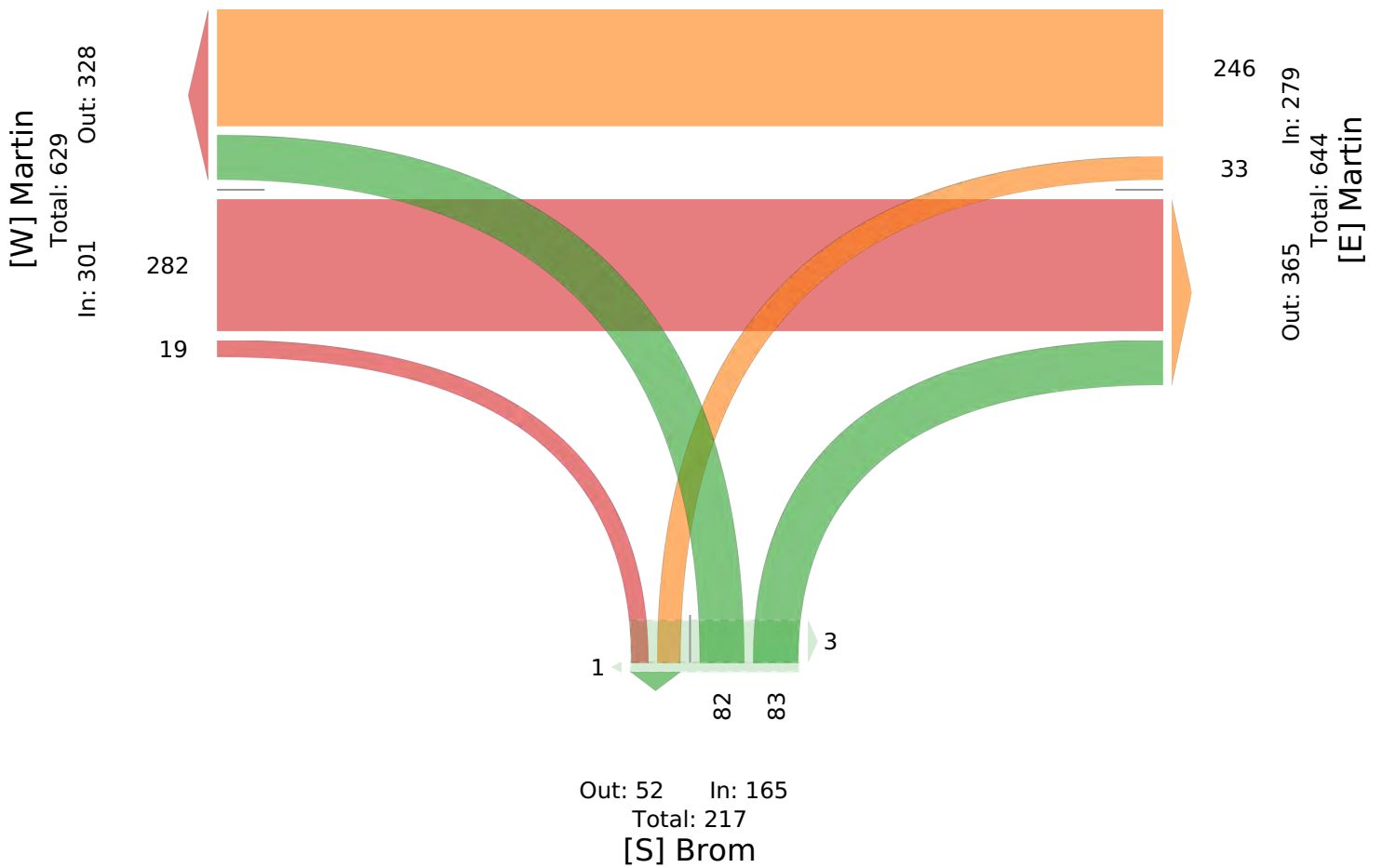
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929945, Location: 41.763008, -88.153309



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



2_Martin Avenue & Washington Street - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929946, Location: 41.76307, -88.149196



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound					Washington Northbound					Washington Southbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
Time																
2022-03-17 7:15AM	23	29	0	52	2	74	444	0	518	0	213	12	0	225	0	795
7:30AM	56	37	0	93	0	83	415	0	498	2	296	27	0	323	0	914
7:45AM	31	52	0	83	0	58	266	0	324	0	263	30	0	293	0	700
8:00AM	33	57	0	90	0	44	268	0	312	0	189	22	0	211	0	613
Total	143	175	0	318	2	259	1393	0	1652	2	961	91	0	1052	0	3022
% Approach	45.0%	55.0%	0%	-	-	15.7%	84.3%	0%	-	-	91.3%	8.7%	0%	-	-	-
% Total	4.7%	5.8%	0%	10.5%	-	8.6%	46.1%	0%	54.7%	-	31.8%	3.0%	0%	34.8%	-	-
PHF	0.638	0.768	-	0.855	-	0.780	0.784	-	0.797	-	0.812	0.758	-	0.814	-	0.827
Lights	143	167	0	310	-	257	1352	0	1609	-	935	90	0	1025	-	2944
% Lights	100%	95.4%	0%	97.5%	-	99.2%	97.1%	0%	97.4%	-	97.3%	98.9%	0%	97.4%	-	97.4%
Articulated Trucks	0	1	0	1	-	0	4	0	4	-	4	1	0	5	-	10
% Articulated Trucks	0%	0.6%	0%	0.3%	-	0%	0.3%	0%	0.2%	-	0.4%	1.1%	0%	0.5%	-	0.3%
Buses and Single-Unit Trucks	0	7	0	7	-	2	37	0	39	-	22	0	0	22	-	68
% Buses and Single-Unit Trucks	0%	4.0%	0%	2.2%	-	0.8%	2.7%	0%	2.4%	-	2.3%	0%	0%	2.1%	-	2.3%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	2	-	-	-	-	2	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2_Martin Avenue & Washington Street - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929946, Location: 41.76307, -88.149196



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Washington

Total: 2588

In: 1052

Out: 1536

91

961

[W] Martin
Total: 668
In: 318 Out: 350

2
143
175



1

259

1393

Out: 1136

In: 1652

Total: 2788

[S] Washington

2_Martin Avenue & Washington Street - TMC

Thu Mar 17, 2022

PM Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929946, Location: 41.76307, -88.149196



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound					Washington Northbound					Washington Southbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
Time																
2022-03-17 5:00PM	41	54	0	95	1	42	252	0	294	0	347	25	0	372	0	761
5:15PM	56	75	0	131	0	30	249	0	279	0	313	19	0	332	0	742
5:30PM	36	47	0	83	4	51	272	0	323	0	293	24	0	317	0	723
5:45PM	28	57	0	85	2	58	256	0	314	1	334	23	0	357	0	756
Total	161	233	0	394	7	181	1029	0	1210	1	1287	91	0	1378	0	2982
% Approach	40.9%	59.1%	0%	-	-	15.0%	85.0%	0%	-	-	93.4%	6.6%	0%	-	-	-
% Total	5.4%	7.8%	0%	13.2%	-	6.1%	34.5%	0%	40.6%	-	43.2%	3.1%	0%	46.2%	-	-
PHF	0.719	0.777	-	0.752	-	0.780	0.946	-	0.937	-	0.927	0.910	-	0.926	-	0.980
Lights	161	231	0	392	-	180	1022	0	1202	-	1279	90	0	1369	-	2963
% Lights	100%	99.1%	0%	99.5%	-	99.4%	99.3%	0%	99.3%	-	99.4%	98.9%	0%	99.3%	-	99.4%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	2	0	2	-	1	7	0	8	-	8	1	0	9	-	19
% Buses and Single-Unit Trucks	0%	0.9%	0%	0.5%	-	0.6%	0.7%	0%	0.7%	-	0.6%	1.1%	0%	0.7%	-	0.6%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	6	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	85.7%	-	-	-	-	0%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	14.3%	-	-	-	-	100%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

2_Martin Avenue & Washington Street - TMC

Thu Mar 17, 2022

PM Peak (5 PM - 6 PM)

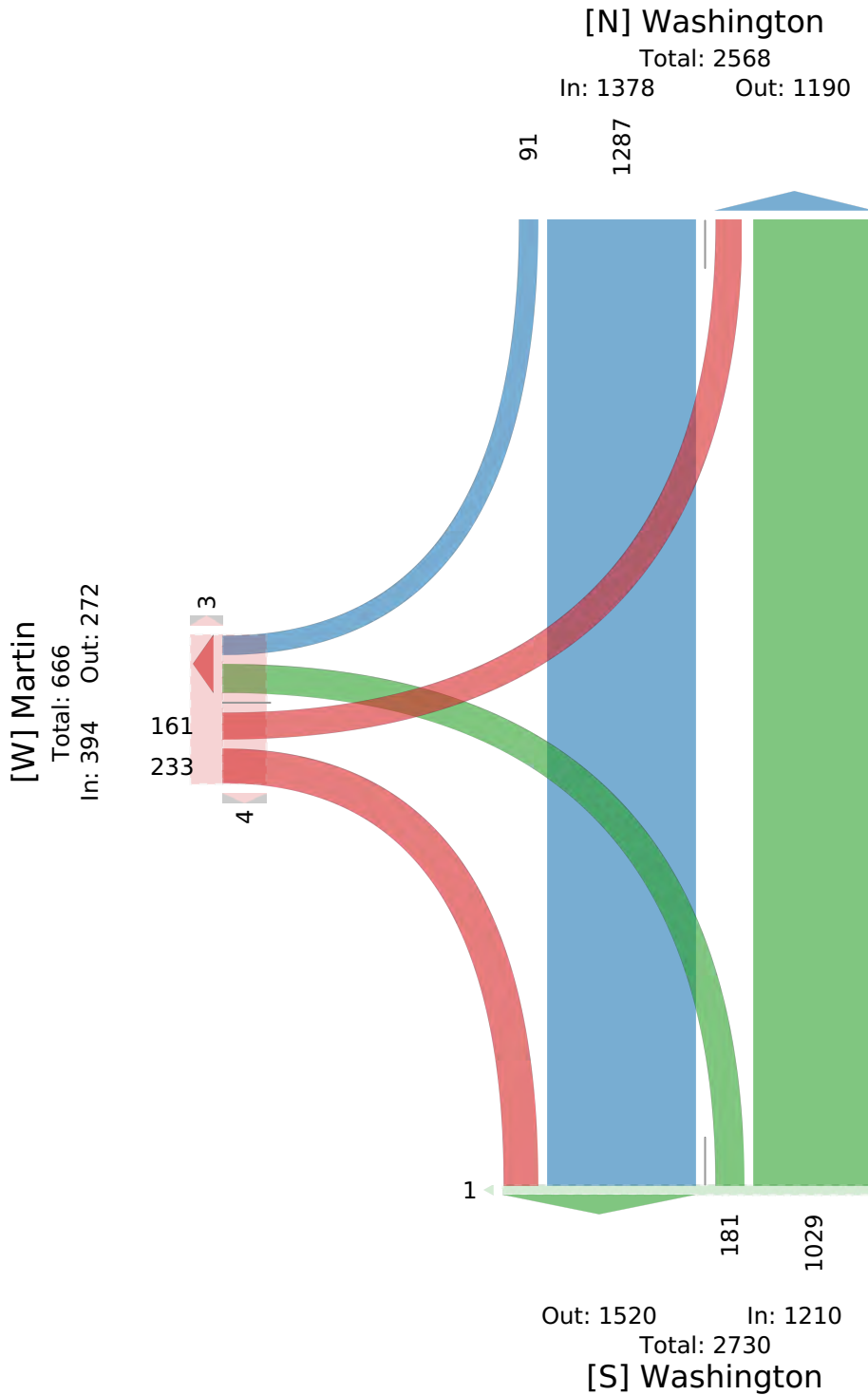
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929946, Location: 41.76307, -88.149196



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



3_Washington Street & Pam Davis Drive - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929947, Location: 41.762202, -88.149212



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pam Davis Eastbound					Washington Northbound					Washington Southbound					
Time	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	Int
2022-03-17 7:15AM	2	5	0	7	2	0	453	0	453	0	222	15	0	237	0	697
7:30AM	1	10	0	11	0	1	433	0	434	0	314	14	0	328	0	773
7:45AM	1	15	0	16	0	1	310	0	311	0	295	23	0	318	0	645
8:00AM	0	6	0	6	0	0	308	0	308	0	230	14	0	244	0	558
Total	4	36	0	40	2	2	1504	0	1506	0	1061	66	0	1127	0	2673
% Approach	10.0%	90.0%	0%	-	-	0.1%	99.9%	0%	-	-	94.1%	5.9%	0%	-	-	-
% Total	0.1%	1.3%	0%	1.5%	-	0.1%	56.3%	0%	56.3%	-	39.7%	2.5%	0%	42.2%	-	-
PHF	0.500	0.600	-	0.625	-	0.500	0.830	-	0.831	-	0.845	0.717	-	0.859	-	0.864
Lights	4	34	0	38	-	1	1462	0	1463	-	1026	66	0	1092	-	2593
% Lights	100%	94.4%	0%	95.0%	-	50.0%	97.2%	0%	97.1%	-	96.7%	100%	0%	96.9%	-	97.0%
Articulated Trucks	0	0	0	0	-	0	4	0	4	-	5	0	0	5	-	9
% Articulated Trucks	0%	0%	0%	0%	-	0%	0.3%	0%	0.3%	-	0.5%	0%	0%	0.4%	-	0.3%
Buses and Single-Unit Trucks	0	2	0	2	-	1	38	0	39	-	30	0	0	30	-	71
% Buses and Single-Unit Trucks	0%	5.6%	0%	5.0%	-	50.0%	2.5%	0%	2.6%	-	2.8%	0%	0%	2.7%	-	2.7%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3_Washington Street & Pam Davis Drive - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM)

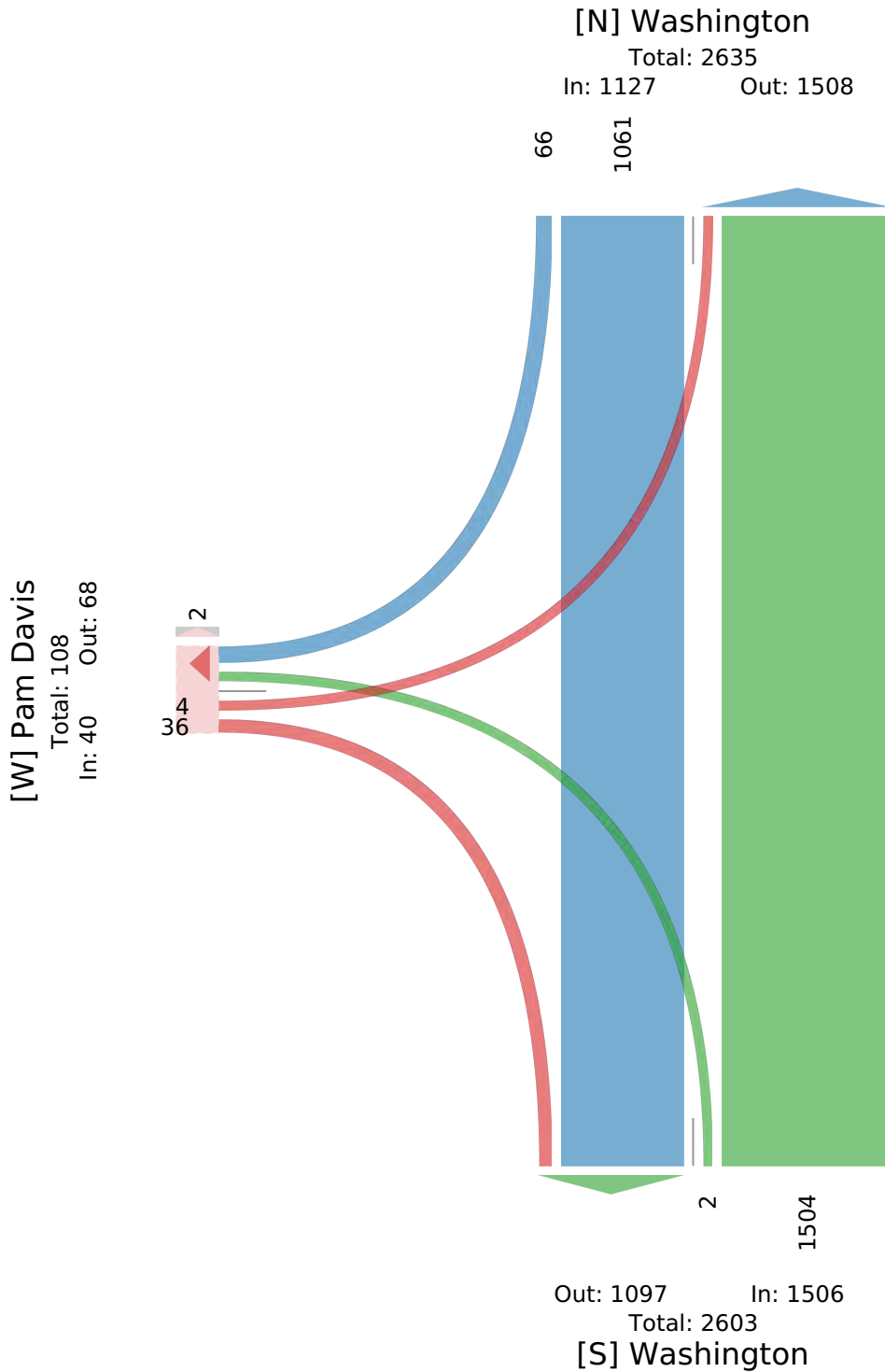
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929947, Location: 41.762202, -88.149212



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



3_Washington Street & Pam Davis Drive - TMC

Thu Mar 17, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929947, Location: 41.762202, -88.149212



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Pam Davis Eastbound					Washington Northbound					Washington Southbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
Time																
2022-03-17 5:00PM	1	21	0	22	0	0	297	0	297	0	397	3	0	400	0	719
5:15PM	1	20	0	21	0	0	282	0	282	0	383	2	0	385	0	688
5:30PM	0	18	0	18	3	0	321	0	321	0	342	2	0	344	0	683
5:45PM	0	10	0	10	7	0	314	0	314	0	388	4	0	392	0	716
Total	2	69	0	71	10	0	1214	0	1214	0	1510	11	0	1521	0	2806
% Approach	2.8%	97.2%	0%	-	-	0%	100%	0%	-	-	99.3%	0.7%	0%	-	-	-
% Total	0.1%	2.5%	0%	2.5%	-	0%	43.3%	0%	43.3%	-	53.8%	0.4%	0%	54.2%	-	-
PHF	0.500	0.821	-	0.807	-	-	0.945	-	0.945	-	0.951	0.688	-	0.951	-	0.976
Lights	2	69	0	71	-	0	1206	0	1206	-	1500	11	0	1511	-	2788
% Lights	100%	100%	0%	100%	-	0%	99.3%	0%	99.3%	-	99.3%	100%	0%	99.3%	-	99.4%
Articulated Trucks	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	0	0	0	0	-	0	8	0	8	-	10	0	0	10	-	18
% Buses and Single-Unit Trucks	0%	0%	0%	0%	-	0%	0.7%	0%	0.7%	-	0.7%	0%	0%	0.7%	-	0.6%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	10	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

3_Washington Street & Pam Davis Drive - TMC

Thu Mar 17, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

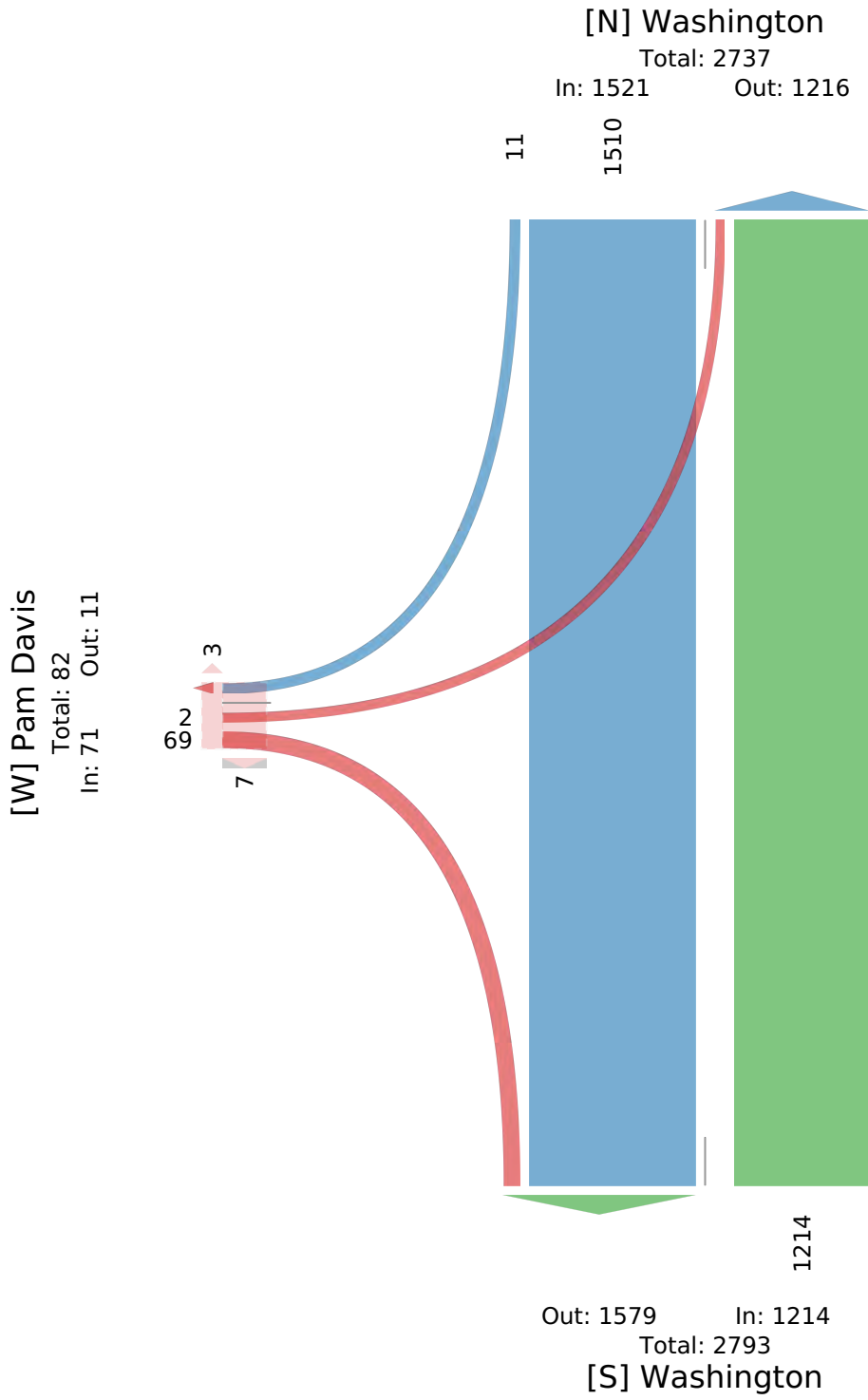
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929947, Location: 41.762202, -88.149212



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



4_Washington Street & Osler Drive - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929948, Location: 41.760485, -88.148755



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Osler Eastbound					Washington Northbound					Washington Southbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
Time																
2022-03-17 7:15AM	3	15	0	18	2	47	529	0	576	0	195	21	0	216	0	810
7:30AM	7	29	0	36	0	40	485	0	525	0	296	16	0	312	0	873
7:45AM	7	24	0	31	0	65	301	0	366	0	294	25	0	319	0	716
8:00AM	11	13	0	24	1	36	298	0	334	0	227	11	0	238	0	596
Total	28	81	0	109	3	188	1613	0	1801	0	1012	73	0	1085	0	2995
% Approach	25.7%	74.3%	0%	-	-	10.4%	89.6%	0%	-	-	93.3%	6.7%	0%	-	-	-
% Total	0.9%	2.7%	0%	3.6%	-	6.3%	53.9%	0%	60.1%	-	33.8%	2.4%	0%	36.2%	-	-
PHF	0.636	0.698	-	0.757	-	0.723	0.762	-	0.782	-	0.855	0.730	-	0.850	-	0.858
Lights	24	79	0	103	-	186	1573	0	1759	-	984	67	0	1051	-	2913
% Lights	85.7%	97.5%	0%	94.5%	-	98.9%	97.5%	0%	97.7%	-	97.2%	91.8%	0%	96.9%	-	97.3%
Articulated Trucks	0	0	0	0	-	1	5	0	6	-	4	1	0	5	-	11
% Articulated Trucks	0%	0%	0%	0%	-	0.5%	0.3%	0%	0.3%	-	0.4%	1.4%	0%	0.5%	-	0.4%
Buses and Single-Unit Trucks	4	2	0	6	-	1	35	0	36	-	24	5	0	29	-	71
% Buses and Single-Unit Trucks	14.3%	2.5%	0%	5.5%	-	0.5%	2.2%	0%	2.0%	-	2.4%	6.8%	0%	2.7%	-	2.4%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

4_Washington Street & Osler Drive - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

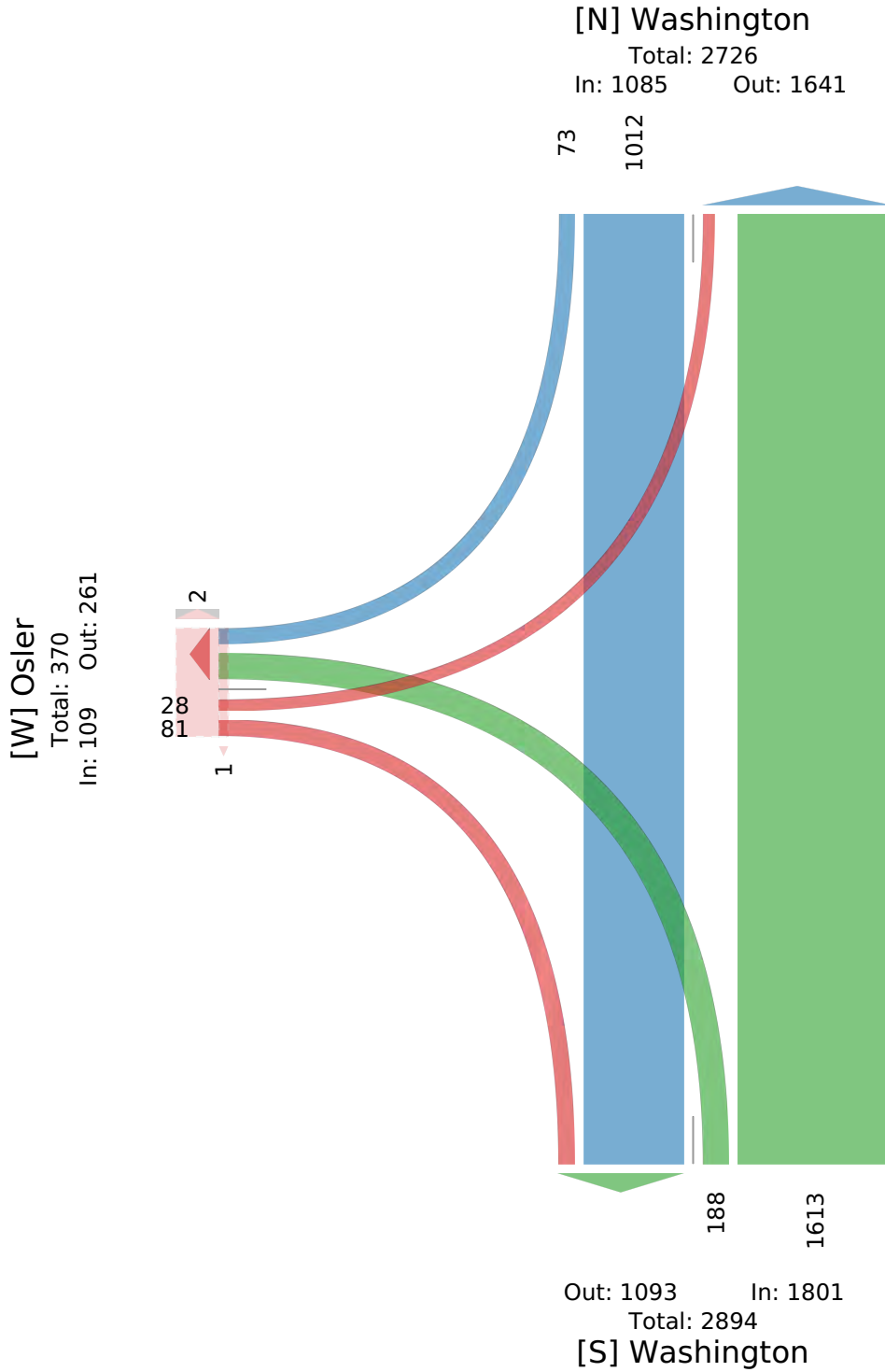
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929948, Location: 41.760485, -88.148755



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



4_Washington Street & Osler Drive - TMC

Thu Mar 17, 2022

PM Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929948, Location: 41.760485, -88.148755



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Osler Eastbound					Washington Northbound					Washington Southbound					
Time	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	Int
2022-03-17 5:00PM	15	28	0	43	0	9	281	0	290	2	407	6	0	413	0	746
5:15PM	11	20	0	31	0	11	269	0	280	0	410	5	1	416	0	727
5:30PM	14	23	0	37	3	11	303	0	314	0	323	7	0	330	0	681
5:45PM	11	19	0	30	5	13	305	0	318	0	375	11	0	386	0	734
Total	51	90	0	141	8	44	1158	0	1202	2	1515	29	1	1545	0	2888
% Approach	36.2%	63.8%	0%	-	-	3.7%	96.3%	0%	-	-	98.1%	1.9%	0.1%	-	-	-
% Total	1.8%	3.1%	0%	4.9%	-	1.5%	40.1%	0%	41.6%	-	52.5%	1.0%	0%	53.5%	-	-
PHF	0.850	0.846	-	0.848	-	0.846	0.948	-	0.943	-	0.924	0.659	0.250	0.928	-	0.972
Lights	47	87	0	134	-	42	1152	0	1194	-	1509	25	1	1535	-	2863
% Lights	92.2%	96.7%	0%	95.0%	-	95.5%	99.5%	0%	99.3%	-	99.6%	86.2%	100%	99.4%	-	99.1%
Articulated Trucks	0	0	0	0	-	1	0	0	1	-	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0%	0%	-	2.3%	0%	0%	0.1%	-	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	4	1	0	5	-	1	4	0	5	-	6	4	0	10	-	20
% Buses and Single-Unit Trucks	7.8%	1.1%	0%	3.5%	-	2.3%	0.3%	0%	0.4%	-	0.4%	13.8%	0%	0.6%	-	0.7%
Bicycles on Road	0	2	0	2	-	0	2	0	2	-	0	0	0	0	-	4
% Bicycles on Road	0%	2.2%	0%	1.4%	-	0%	0.2%	0%	0.2%	-	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	8	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	0%	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	100%	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

4_Washington Street & Osler Drive - TMC

Thu Mar 17, 2022

PM Peak (5 PM - 6 PM)

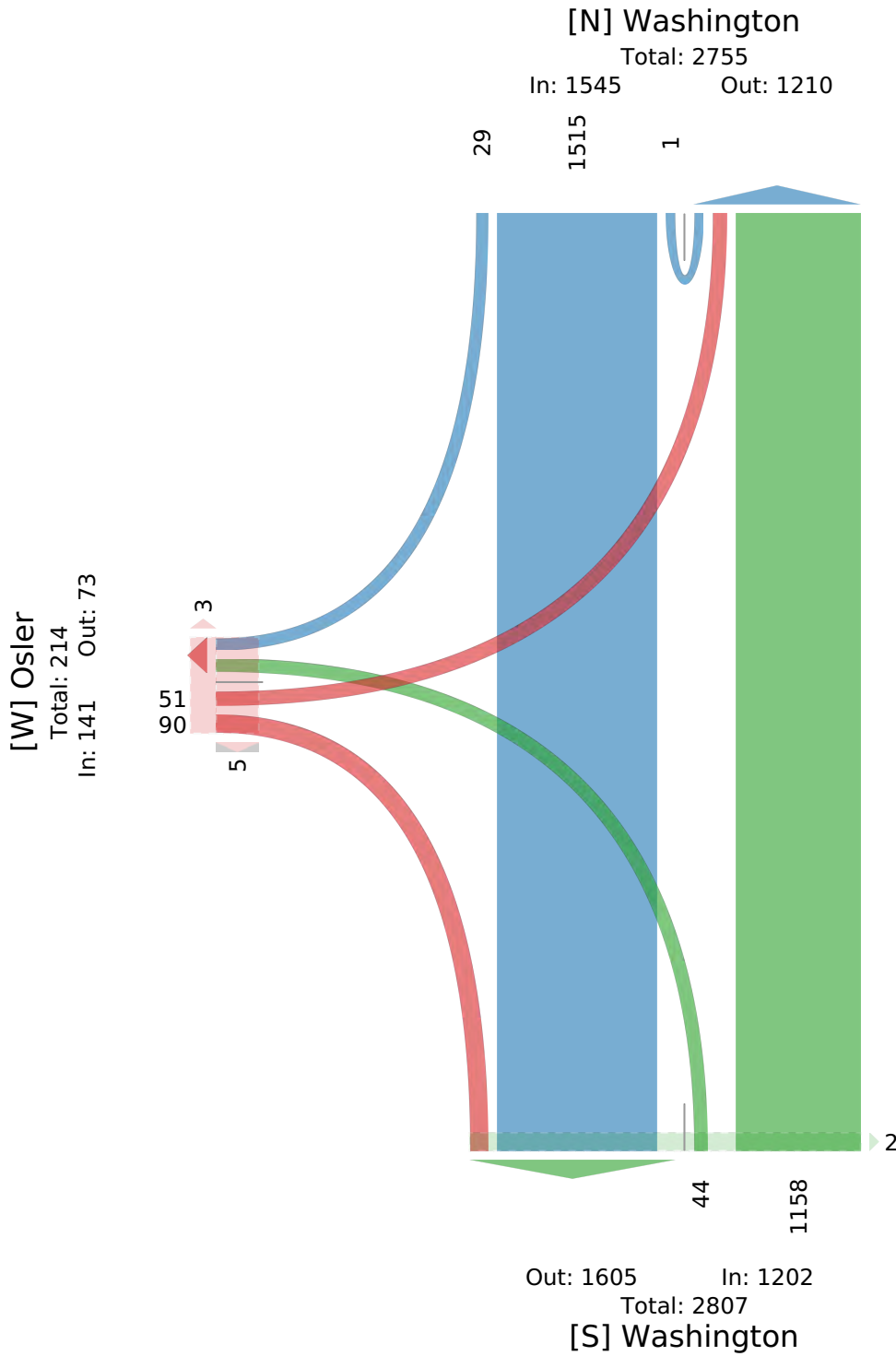
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929948, Location: 41.760485, -88.148755



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



5_Martin Avenue & Driveway 1 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929941, Location: 41.763038, -88.151045



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound				Martin Westbound				Access Northbound				Int
	T	R	U	App	L	T	U	App	L	R	U	App	
2022-03-17 7:15AM	65	0	0	65	0	84	0	84	0	0	0	0	149
7:30AM	91	0	0	91	0	109	0	109	0	0	0	0	200
7:45AM	89	0	0	89	0	81	0	81	0	0	0	0	170
8:00AM	89	0	0	89	0	60	0	60	0	0	0	0	149
Total	334	0	0	334	0	334	0	334	0	0	0	0	668
% Approach	100%	0%	0%	-	0%	100%	0%	-	0%	0%	0%	-	-
% Total	50.0%	0%	0%	50.0%	0%	50.0%	0%	50.0%	0%	0%	0%	0%	-
PHF	0.918	-	-	0.918	-	0.766	-	0.766	-	-	-	-	0.835
Lights	327	0	0	327	0	331	0	331	0	0	0	0	658
% Lights	97.9%	0%	0%	97.9%	0%	99.1%	0%	99.1%	0%	0%	0%	-	98.5%
Articulated Trucks	0	0	0	0	0	1	0	1	0	0	0	0	1
% Articulated Trucks	0%	0%	0%	0%	0%	0.3%	0%	0.3%	0%	0%	0%	-	0.1%
Buses and Single-Unit Trucks	7	0	0	7	0	2	0	2	0	0	0	0	9
% Buses and Single-Unit Trucks	2.1%	0%	0%	2.1%	0%	0.6%	0%	0.6%	0%	0%	0%	-	1.3%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	0%

*L: Left, R: Right, T: Thru, U: U-Turn

5_Martin Avenue & Driveway 1 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Bicycles on Road)

All Movements

ID: 929941, Location: 41.763038, -88.151045



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



5_Martin Avenue & Driveway 1 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929941, Location: 41.763038, -88.151045



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound				Martin Westbound				Access Northbound				Int
	T	R	U	App	L	T	U	App	L	R	U	App	
2022-03-17 5:00PM	90	0	0	90	0	68	0	68	0	0	0	0	158
5:15PM	115	0	0	115	0	50	0	50	0	0	0	0	165
5:30PM	86	0	0	86	0	78	0	78	0	0	0	0	164
5:45PM	79	0	0	79	0	82	0	82	0	0	0	0	161
Total	370	0	0	370	0	278	0	278	0	0	0	0	648
% Approach	100%	0%	0%	-	0%	100%	0%	-	0%	0%	0%	-	-
% Total	57.1%	0%	0%	57.1%	0%	42.9%	0%	42.9%	0%	0%	0%	0%	-
PHF	0.804	-	-	0.804	-	0.855	-	0.855	-	-	-	-	0.980
Lights	368	0	0	368	0	275	0	275	0	0	0	0	643
% Lights	99.5%	0%	0%	99.5%	0%	98.9%	0%	98.9%	0%	0%	0%	-	99.2%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	0%
Buses and Single-Unit Trucks	2	0	0	2	0	2	0	2	0	0	0	0	4
% Buses and Single-Unit Trucks	0.5%	0%	0%	0.5%	0%	0.7%	0%	0.7%	0%	0%	0%	-	0.6%
Bicycles on Road	0	0	0	0	0	1	0	1	0	0	0	0	1
% Bicycles on Road	0%	0%	0%	0%	0%	0.4%	0%	0.4%	0%	0%	0%	-	0.2%

*L: Left, R: Right, T: Thru, U: U-Turn

5_Martin Avenue & Driveway 1 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks,
Bicycles on Road)

All Movements

ID: 929941, Location: 41.763038, -88.151045



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



6_Martin Avenue & Driveway 2 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929942, Location: 41.763043, -88.15082



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound				Martin Westbound				Access Northbound				Int
	T	R	U	App	L	T	U	App	L	R	U	App	
Time													
2022-03-17 7:15AM	62	3	0	65	0	83	0	83	0	0	0	0	148
7:30AM	91	0	0	91	0	110	0	110	0	0	0	0	201
7:45AM	87	1	0	88	0	81	0	81	0	0	0	0	169
8:00AM	89	1	0	90	3	60	0	63	0	0	0	0	153
Total	329	5	0	334	3	334	0	337	0	0	0	0	671
% Approach	98.5%	1.5%	0%	-	0.9%	99.1%	0%	-	0%	0%	0%	-	-
% Total	49.0%	0.7%	0%	49.8%	0.4%	49.8%	0%	50.2%	0%	0%	0%	0%	-
PHF	0.904	0.417	-	0.918	0.250	0.759	-	0.766	-	-	-	-	0.835
Lights	321	5	0	326	3	331	0	334	0	0	0	0	660
% Lights	97.6%	100%	0%	97.6%	100%	99.1%	0%	99.1%	0%	0%	0%	-	98.4%
Articulated Trucks	1	0	0	1	0	1	0	1	0	0	0	0	2
% Articulated Trucks	0.3%	0%	0%	0.3%	0%	0.3%	0%	0.3%	0%	0%	0%	-	0.3%
Buses and Single-Unit Trucks	7	0	0	7	0	2	0	2	0	0	0	0	9
% Buses and Single-Unit Trucks	2.1%	0%	0%	2.1%	0%	0.6%	0%	0.6%	0%	0%	0%	-	1.3%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	0%

*L: Left, R: Right, T: Thru, U: U-Turn

6_Martin Avenue & Driveway 2 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM) - Overall Peak Hour

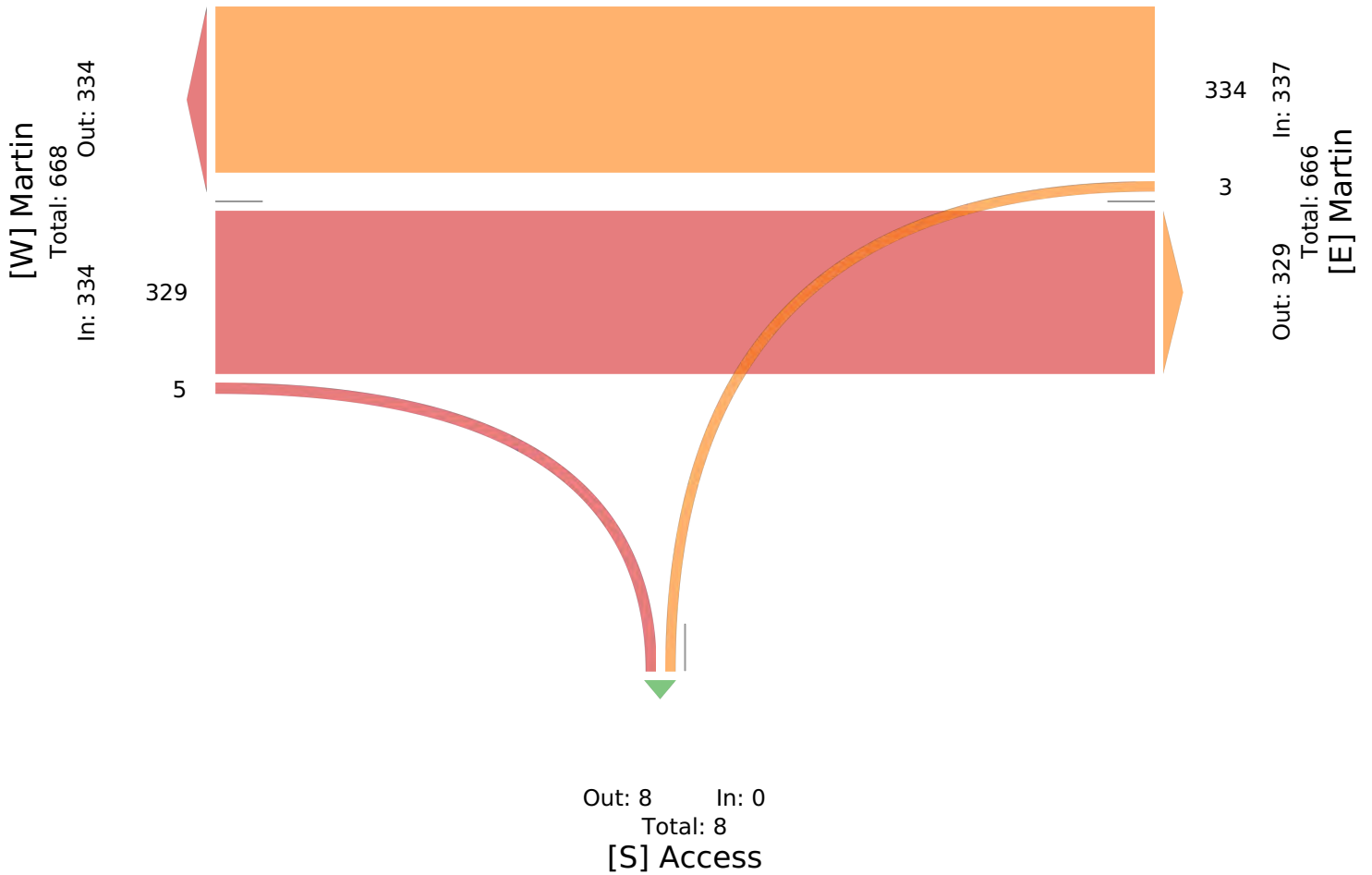
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929942, Location: 41.763043, -88.15082



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



6_Martin Avenue & Driveway 2 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929942, Location: 41.763043, -88.15082



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound				Martin Westbound				Access Northbound				Int
	T	R	U	App	L	T	U	App	L	R	U	App	
2022-03-17 5:00PM	91	0	0	91	0	67	0	67	2	0	0	2	160
5:15PM	114	0	0	114	0	49	0	49	1	0	0	1	164
5:30PM	87	0	0	87	0	73	0	73	5	1	0	6	166
5:45PM	78	0	0	78	0	82	0	82	0	0	0	0	160
Total	370	0	0	370	0	271	0	271	8	1	0	9	650
% Approach	100%	0%	0%	-	0%	100%	0%	-	88.9%	11.1%	0%	-	-
% Total	56.9%	0%	0%	56.9%	0%	41.7%	0%	41.7%	1.2%	0.2%	0%	1.4%	-
PHF	0.811	-	-	0.811	-	0.833	-	0.833	0.400	0.250	-	0.375	0.977
Lights	368	0	0	368	0	268	0	268	8	1	0	9	645
% Lights	99.5%	0%	0%	99.5%	0%	98.9%	0%	98.9%	100%	100%	0%	100%	99.2%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	2	0	0	2	0	2	0	2	0	0	0	0	4
% Buses and Single-Unit Trucks	0.5%	0%	0%	0.5%	0%	0.7%	0%	0.7%	0%	0%	0%	0%	0.6%
Bicycles on Road	0	0	0	0	0	1	0	1	0	0	0	0	1
% Bicycles on Road	0%	0%	0%	0%	0%	0.4%	0%	0.4%	0%	0%	0%	0%	0.2%

*L: Left, R: Right, T: Thru, U: U-Turn

6_Martin Avenue & Driveway 2 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

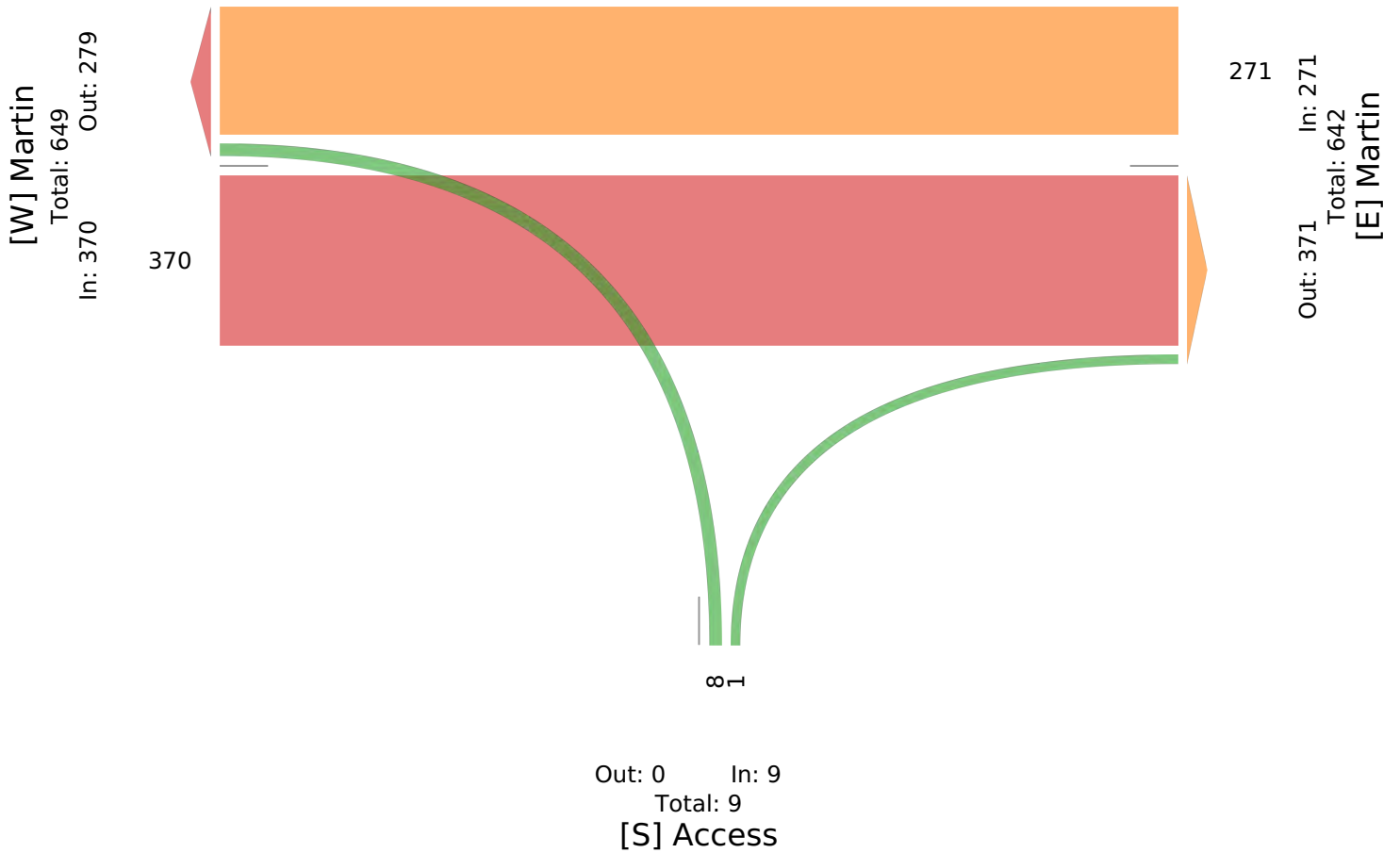
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929942, Location: 41.763043, -88.15082



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



7_Martin Avenue & Driveway 3 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929943, Location: 41.763039, -88.150626



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound				Martin Westbound				Access Northbound				
Time	T	R	U	App	L	T	U	App	L	R	U	App	Int
2022-03-17 7:15AM	56	6	0	62	3	83	0	86	0	0	0	0	148
7:30AM	90	1	0	91	0	108	0	108	1	0	0	1	200
7:45AM	84	3	0	87	7	81	0	88	1	1	0	2	177
8:00AM	86	2	0	88	7	62	0	69	0	0	0	0	157
Total	316	12	0	328	17	334	0	351	2	1	0	3	682
% Approach	96.3%	3.7%	0%	-	4.8%	95.2%	0%	-	66.7%	33.3%	0%	-	-
% Total	46.3%	1.8%	0%	48.1%	2.5%	49.0%	0%	51.5%	0.3%	0.1%	0%	0.4%	-
PHF	0.878	0.500	-	0.901	0.607	0.773	-	0.813	0.500	0.250	-	0.375	0.853
Lights	308	12	0	320	17	331	0	348	2	1	0	3	671
% Lights	97.5%	100%	0%	97.6%	100%	99.1%	0%	99.1%	100%	100%	0%	100%	98.4%
Articulated Trucks	1	0	0	1	0	1	0	1	0	0	0	0	2
% Articulated Trucks	0.3%	0%	0%	0.3%	0%	0.3%	0%	0.3%	0%	0%	0%	0%	0.3%
Buses and Single-Unit Trucks	7	0	0	7	0	2	0	2	0	0	0	0	9
% Buses and Single-Unit Trucks	2.2%	0%	0%	2.1%	0%	0.6%	0%	0.6%	0%	0%	0%	0%	1.3%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

*L: Left, R: Right, T: Thru, U: U-Turn

7_Martin Avenue & Driveway 3 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM)

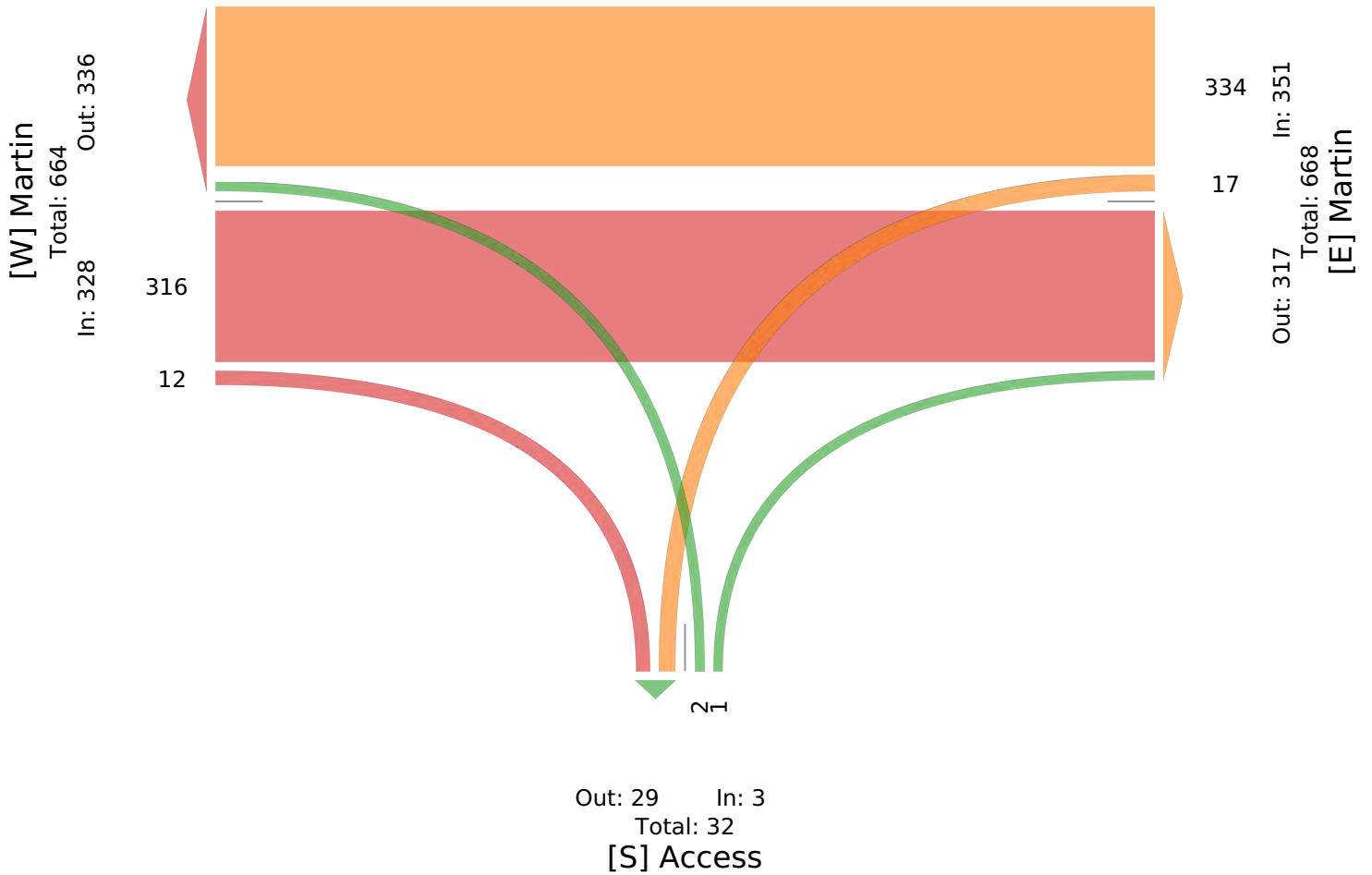
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929943, Location: 41.763039, -88.150626



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



7_Martin Avenue & Driveway 3 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929943, Location: 41.763039, -88.150626



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Martin Eastbound				Martin Westbound				Access Northbound				
Time	T	R	U	App	L	T	U	App	L	R	U	App	Int
2022-03-17 5:00PM	91	1	0	92	2	67	0	69	1	7	0	8	169
5:15PM	111	2	0	113	1	48	0	49	0	9	0	9	171
5:30PM	86	2	0	88	2	72	0	74	0	5	0	5	167
5:45PM	77	2	0	79	5	77	0	82	3	3	0	6	167
Total	365	7	0	372	10	264	0	274	4	24	0	28	674
% Approach	98.1%	1.9%	0%	-	3.6%	96.4%	0%	-	14.3%	85.7%	0%	-	-
% Total	54.2%	1.0%	0%	55.2%	1.5%	39.2%	0%	40.7%	0.6%	3.6%	0%	4.2%	-
PHF	0.822	0.875	-	0.823	0.500	0.857	-	0.835	0.333	0.667	-	0.778	0.985
Lights	363	7	0	370	10	262	0	272	4	24	0	28	670
% Lights	99.5%	100%	0%	99.5%	100%	99.2%	0%	99.3%	100%	100%	0%	100%	99.4%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	2	0	0	2	0	2	0	2	0	0	0	0	4
% Buses and Single-Unit Trucks	0.5%	0%	0%	0.5%	0%	0.8%	0%	0.7%	0%	0%	0%	0%	0.6%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

*L: Left, R: Right, T: Thru, U: U-Turn

7_Martin Avenue & Driveway 3 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

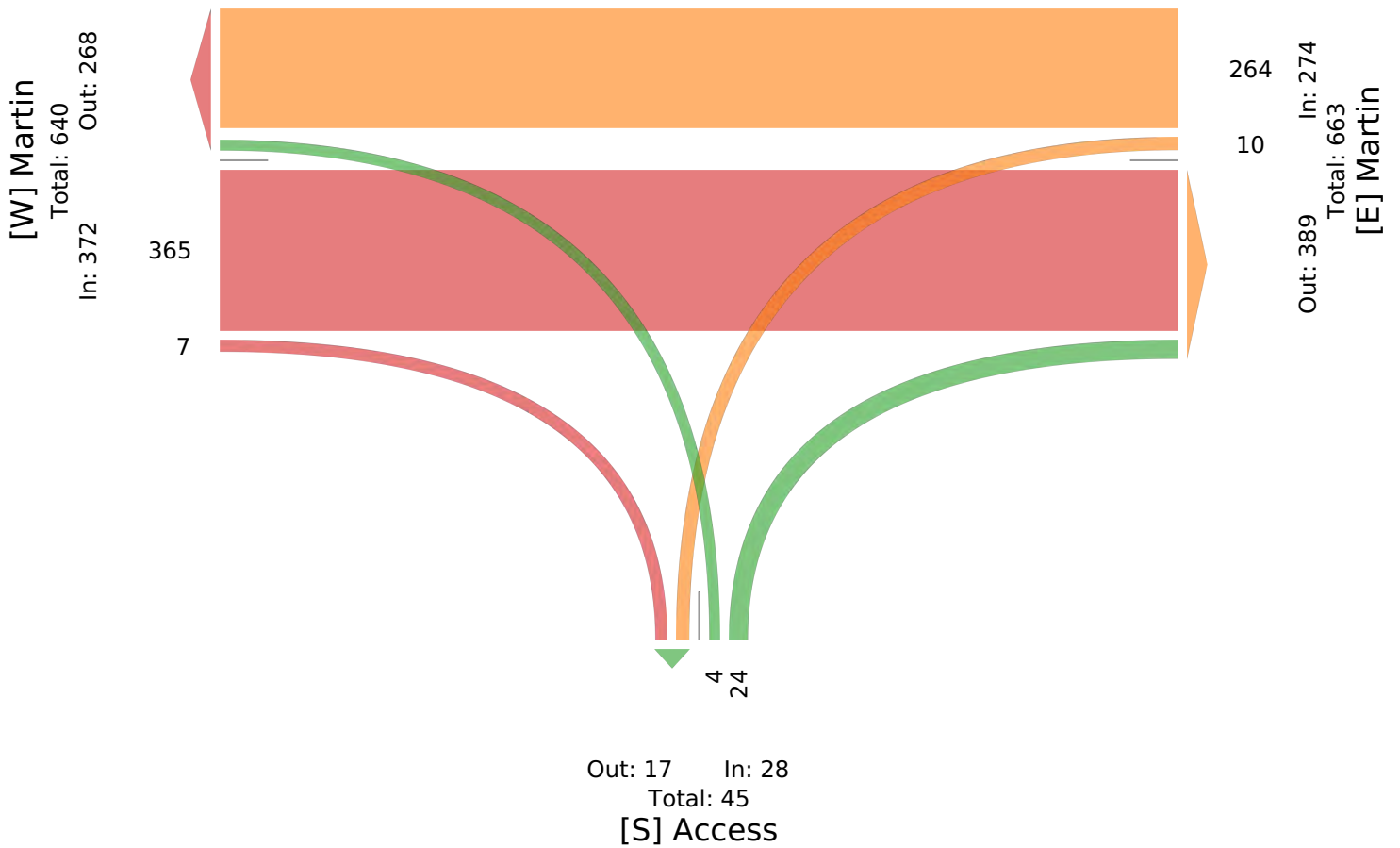
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929943, Location: 41.763039, -88.150626



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



8_Martin Avenue & Driveway 4 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929944, Location: 41.763067, -88.149598



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Marion Eastbound				Marion Westbound				Access Northbound				
Time	T	R	U	App	L	T	U	App	L	R	U	App	Int
2022-03-17 7:15AM	55	0	0	55	0	86	0	86	0	0	0	0	141
7:30AM	90	0	0	90	0	115	0	115	0	0	0	0	205
7:45AM	85	0	0	85	0	86	0	86	0	1	0	1	172
8:00AM	86	0	0	86	0	67	0	67	0	1	0	1	154
Total	316	0	0	316	0	354	0	354	0	2	0	2	672
% Approach	100%	0%	0%	-	0%	100%	0%	-	0%	100%	0%	-	-
% Total	47.0%	0%	0%	47.0%	0%	52.7%	0%	52.7%	0%	0.3%	0%	0.3%	-
PHF	0.878	-	-	0.878	-	0.770	-	0.770	-	0.500	-	0.500	0.820
Lights	309	0	0	309	0	351	0	351	0	2	0	2	662
% Lights	97.8%	0%	0%	97.8%	0%	99.2%	0%	99.2%	0%	100%	0%	100%	98.5%
Articulated Trucks	0	0	0	0	0	1	0	1	0	0	0	0	1
% Articulated Trucks	0%	0%	0%	0%	0%	0.3%	0%	0.3%	0%	0%	0%	0%	0.1%
Buses and Single-Unit Trucks	7	0	0	7	0	2	0	2	0	0	0	0	9
% Buses and Single-Unit Trucks	2.2%	0%	0%	2.2%	0%	0.6%	0%	0.6%	0%	0%	0%	0%	1.3%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

*L: Left, R: Right, T: Thru, U: U-Turn

8_Martin Avenue & Driveway 4 - TMC

Thu Mar 17, 2022

AM Peak (7:15 AM - 8:15 AM)

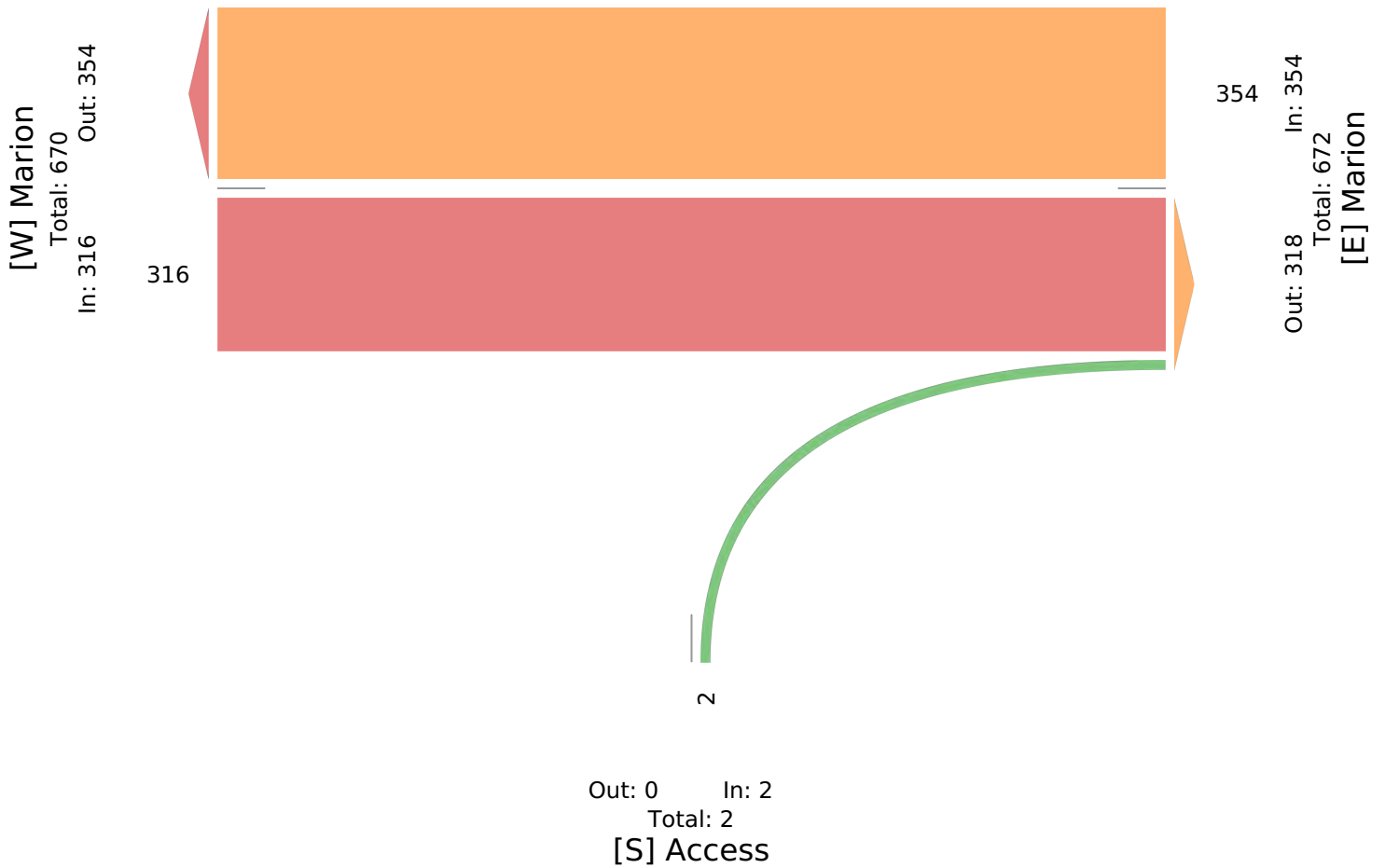
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929944, Location: 41.763067, -88.149598



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



8_Martin Avenue & Driveway 4 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929944, Location: 41.763067, -88.149598



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	Marion Eastbound				Marion Westbound				Access Northbound				Int
	T	R	U	App	L	T	U	App	L	R	U	App	
2022-03-17 5:00PM	91	0	0	91	0	67	0	67	2	7	0	9	167
5:15PM	126	0	0	126	0	49	0	49	0	4	0	4	179
5:30PM	87	0	0	87	0	76	0	76	0	0	0	0	163
5:45PM	83	0	0	83	0	81	0	81	0	0	0	0	164
Total	387	0	0	387	0	273	0	273	2	11	0	13	673
% Approach	100%	0%	0%	-	0%	100%	0%	-	15.4%	84.6%	0%	-	-
% Total	57.5%	0%	0%	57.5%	0%	40.6%	0%	40.6%	0.3%	1.6%	0%	1.9%	-
PHF	0.768	-	-	0.768	-	0.843	-	0.843	0.250	0.393	-	0.361	0.940
Lights	385	0	0	385	0	271	0	271	2	11	0	13	669
% Lights	99.5%	0%	0%	99.5%	0%	99.3%	0%	99.3%	100%	100%	0%	100%	99.4%
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses and Single-Unit Trucks	2	0	0	2	0	2	0	2	0	0	0	0	4
% Buses and Single-Unit Trucks	0.5%	0%	0%	0.5%	0%	0.7%	0%	0.7%	0%	0%	0%	0%	0.6%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

*L: Left, R: Right, T: Thru, U: U-Turn

8_Martin Avenue & Driveway 4 - TMC

Thu Mar 17, 2022

Forced Peak (5 PM - 6 PM)

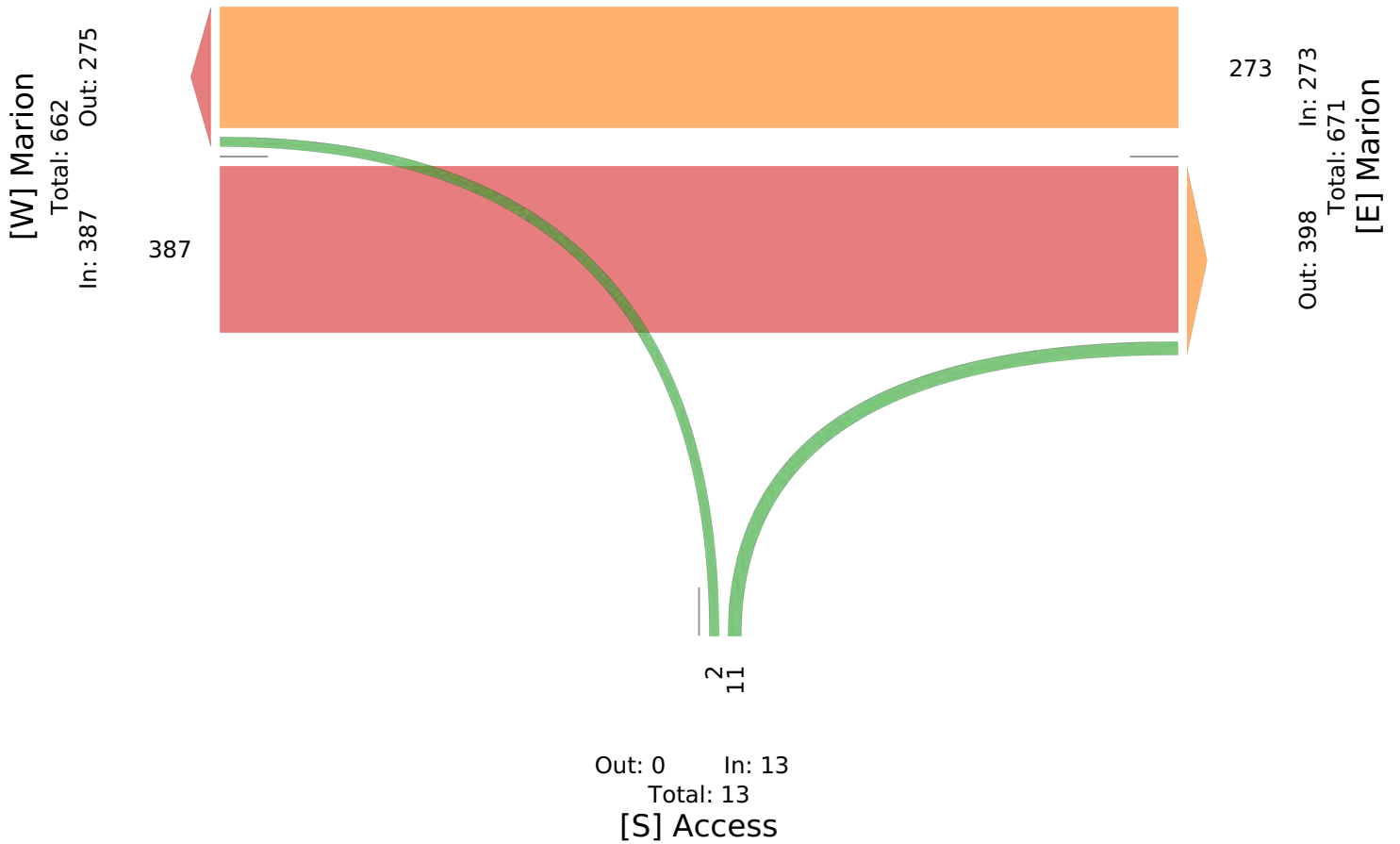
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Bicycles on Road)

All Movements

ID: 929944, Location: 41.763067, -88.149598



Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



EXISTING YEAR (2022) CAPACITY REPORTS

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	290	140	125	210	50	45
Future Vol, veh/h	290	140	125	210	50	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	305	147	132	221	53	47

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	452	0	864
Stage 1	-	-	-	-	379
Stage 2	-	-	-	-	485
Critical Hdwy	-	-	4.12	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	-	-	2.218	-	3.554
Pot Cap-1 Maneuver	-	-	1109	-	319
Stage 1	-	-	-	-	683
Stage 2	-	-	-	-	611
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1109	-	276
Mov Cap-2 Maneuver	-	-	-	-	276
Stage 1	-	-	-	-	683
Stage 2	-	-	-	-	528

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	16.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	276	668	-	-	1109	-
HCM Lane V/C Ratio	0.191	0.071	-	-	0.119	-
HCM Control Delay (s)	21.1	10.8	-	-	8.7	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.4	-

HCM 6th Signalized Intersection Summary
200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	175	260	1390	960	95
Future Volume (veh/h)	145	175	260	1390	960	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1953	1856	1870
Adj Flow Rate, veh/h	153	184	274	1463	1011	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	2	3	3	2
Cap, veh/h	236	303	450	2895	2228	220
Arrive On Green	0.13	0.13	0.06	0.78	0.69	0.69
Sat Flow, veh/h	1781	1547	1781	3809	3333	320
Grp Volume(v), veh/h	153	184	274	1463	550	561
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1856	1763	1798
Q Serve(g_s), s	9.8	13.0	5.1	17.2	17.0	17.0
Cycle Q Clear(g_c), s	9.8	13.0	5.1	17.2	17.0	17.0
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	236	303	450	2895	1212	1236
V/C Ratio(X)	0.65	0.61	0.61	0.51	0.45	0.45
Avail Cap(c_a), veh/h	408	453	567	2895	1212	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	44.1	7.1	4.8	8.5	8.5
Incr Delay (d2), s/veh	3.0	2.0	1.3	0.6	1.2	1.2
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	16.7	3.1	9.5	10.6	10.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.4	46.0	8.4	5.4	9.7	9.7
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	337			1737	1111	
Approach Delay, s/veh	48.9			5.9	9.7	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		99.6		20.4	11.1	88.5
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		82.0		27.5	15.5	63.0
Max Q Clear Time (g_c+l1), s		19.2		15.0	7.1	19.0
Green Ext Time (p_c), s		50.2		0.9	0.5	29.3
Intersection Summary						
HCM 6th Ctrl Delay			11.8			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	145	175	260	1390	960	95			
Future Volume (veh/h)	145	175	260	1390	960	95			
Number	7	14	5	2	6	16			
Initial Q, 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				
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1826	1870	1953	1856	1870			
Adj Flow Rate, veh/h	153	184	274	1463	1011	100			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	5	2	3	3	2			
Opposing Right Turn Influence	Yes		Yes						
Cap, veh/h	236	303	450	2895	2228	220			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.13	0.13	0.06	0.78	0.69	0.69			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	52.4	46.0	8.4	5.4	9.7	9.7			
Ln Grp LOS	D	D	A	A	A	A			
Approach Vol, veh/h	337			1737	1111				
Approach Delay, s/veh	48.9			5.9	9.7				
Approach LOS	D			A	A				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs			2		4	5	6		
Case No			4.0		9.0	1.2	8.0		
Phs Duration (G+Y+Rc), s			99.6		20.4	11.1	88.5		
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0		
Max Green (Gmax), s			82.0		27.5	15.5	63.0		
Max Allow Headway (MAH), s			9.2		3.9	3.8	9.3		
Max Q Clear (g_c+I1), s			19.2		15.0	7.1	19.0		
Green Ext Time (g_e), s			50.2		0.9	0.5	29.3		
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00		
Prob of Max Out (p_x)			0.69		0.01	0.05	0.58		
Left-Turn Movement Data									
Assigned Mvmt					7	5	1		
Mvmt Sat Flow, veh/h					1781	1781	0		
Through Movement Data									
Assigned Mvmt			2		4		6		
Mvmt Sat Flow, veh/h			3809		0		3333		
Right-Turn Movement Data									
Assigned Mvmt			12		14		16		
Mvmt Sat Flow, veh/h			0		1547		320		
Left Lane Group Data									
Assigned Mvmt		0	0	0	7	5	1	0	0
Lane Assignment					LL (Pr/Pm)				

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
 AM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	153	274	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1781	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	9.8	5.1	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	9.8	5.1	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1781	507	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	84.5	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	65.5	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	22.3	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	82.5	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	236	450	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.65	0.61	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	408	567	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	49.4	7.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.0	1.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	52.4	8.4	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	4.4	1.6	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.77	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	8.1	3.1	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	3.72	0.75	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1463	0	0	0	550	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1763	0	0
Q Serve Time (g_s), s	0.0	17.2	0.0	0.0	0.0	17.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	17.2	0.0	0.0	0.0	17.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	2895	0	0	0	1212	0	0
V/C Ratio (X)	0.00	0.51	0.00	0.00	0.00	0.45	0.00	0.00
Avail Cap (c_a), veh/h	0	2895	0	0	0	1212	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	4.8	0.0	0.0	0.0	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	5.4	0.0	0.0	0.0	9.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.4	0.0	0.0	0.0	6.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
AM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.69	0.00	1.00	0.00	1.65	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	9.5	0.0	0.0	0.0	10.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.02	0.00	0.00	0.00	0.51	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	184	0	561	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1547	0	1798	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	13.0	0.0	17.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	13.0	0.0	17.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	1547.4	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.18	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	303	0	1236	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.61	0.00	0.45	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	453	0	1236	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	44.1	0.0	8.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.0	0.0	1.2	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	46.0	0.0	9.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	11.1	0.0	6.1	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.49	0.00	1.64	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	16.7	0.0	10.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	7.90	0.00	0.51	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	35	0	1650	1070	65
Future Vol, veh/h	0	35	0	1650	1070	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	6	2	3	3	2
Mvmt Flow	0	37	0	1737	1126	68

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	563	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.02	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.36	-
Pot Cap-1 Maneuver	0	460	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	460	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 460	-
HCM Lane V/C Ratio	- 0.08	-
HCM Control Delay (s)	- 13.5	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.3	-

HCM 6th Signalized Intersection Summary
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	80	190	1620	1030	75
Future Volume (veh/h)	30	80	190	1620	1030	75
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	1693	1856	1870	1953	1856	1781
Adj Flow Rate, veh/h	32	84	200	1705	1084	79
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	3	2	3	3	8
Cap, veh/h	113	110	508	3127	2568	187
Arrive On Green	0.07	0.07	0.04	0.84	1.00	1.00
Sat Flow, veh/h	1612	1572	1781	3809	3425	243
Grp Volume(v), veh/h	32	84	200	1705	573	590
Grp Sat Flow(s),veh/h/ln	1612	1572	1781	1856	1763	1812
Q Serve(g_s), s	2.3	6.3	2.6	16.1	0.0	0.0
Cycle Q Clear(g_c), s	2.3	6.3	2.6	16.1	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	113	110	508	3127	1359	1396
V/C Ratio(X)	0.28	0.76	0.39	0.55	0.42	0.42
Avail Cap(c_a), veh/h	343	334	840	3127	1359	1396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	54.8	2.0	2.8	0.0	0.0
Incr Delay (d2), s/veh	1.4	10.4	0.5	0.7	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	9.6	1.2	7.2	0.7	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.3	65.2	2.5	3.4	1.0	0.9
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	116			1905	1163	
Approach Delay, s/veh	62.2			3.3	1.0	
Approach LOS	E			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		107.1		12.9	8.6	98.5
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		84.0		25.5	27.5	53.0
Max Q Clear Time (g_c+l1), s		18.1		8.3	4.6	2.0
Green Ext Time (p_c), s		58.4		0.3	0.5	34.1
Intersection Summary						
HCM 6th Ctrl Delay			4.6			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	30	80	190	1620	1030	75				
Future Volume (veh/h)	30	80	190	1620	1030	75				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1693	1856	1870	1953	1856	1781				
Adj Flow Rate, veh/h	32	84	200	1705	1084	79				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	14	3	2	3	3	8				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	113	110	508	3127	2568	187				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				
Prop Arrive On Green	0.07	0.07	0.04	0.84	1.00	1.00				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	54.3	65.2	2.5	3.4	1.0	0.9				
Ln Grp LOS	D	E	A	A	A	A				
Approach Vol, veh/h	116			1905	1163					
Approach Delay, s/veh	62.2			3.3	1.0					
Approach LOS	E			A	A					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			107.1		12.9	8.6	98.5			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			84.0		25.5	27.5	53.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3			
Max Q Clear (g_c+I1), s			18.1		8.3	4.6	2.0			
Green Ext Time (g_e), s			58.4		0.3	0.5	34.1			
Prob of Phs Call (p_c)			1.00		0.98	1.00	1.00			
Prob of Max Out (p_x)			0.82		0.00	0.00	0.56			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1612	1781	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3809		0		3425			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1572		243			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
AM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	32	200	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1612	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	2.3	2.6	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	2.3	2.6	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1612	483	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	94.5	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	92.5	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	92.5	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	113	508	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.28	0.39	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	343	840	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	52.9	2.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.5	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	54.3	2.5	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.9	0.6	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.80	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	1.7	1.2	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.48	0.25	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1705	0	0	0	573	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1763	0	0
Q Serve Time (g_s), s	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	16.1	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	3127	0	0	0	1359	0	0
V/C Ratio (X)	0.00	0.55	0.00	0.00	0.00	0.42	0.00	0.00
Avail Cap (c_a), veh/h	0	3127	0	0	0	1359	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.4	0.0	0.0	0.0	1.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
AM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	7.2	0.0	0.0	0.0	0.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.23	0.00	0.00	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	84	0	590	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1572	0	1812	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.13	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	110	0	1396	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.76	0.00	0.42	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	334	0	1396	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	54.8	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	10.4	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	65.2	0.0	0.9	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.69	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	9.6	0.0	0.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.10	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	335	0	0	335	0	0
Future Vol, veh/h	335	0	0	335	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	0	0	353	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	353	0	706
Stage 1	-	-	-	-	353
Stage 2	-	-	-	-	353
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1206	-	402
Stage 1	-	-	-	-	711
Stage 2	-	-	-	-	711
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1206	-	402
Mov Cap-2 Maneuver	-	-	-	-	402
Stage 1	-	-	-	-	711
Stage 2	-	-	-	-	711

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1206	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	330	5	5	335	1	1
Future Vol, veh/h	330	5	5	335	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	347	5	5	353	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	352	0	713 350
Stage 1	-	-	-	-	350 -
Stage 2	-	-	-	-	363 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1207	-	398 693
Stage 1	-	-	-	-	713 -
Stage 2	-	-	-	-	704 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1207	-	396 693
Mov Cap-2 Maneuver	-	-	-	-	396 -
Stage 1	-	-	-	-	713 -
Stage 2	-	-	-	-	700 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	504	-	-	1207	-
HCM Lane V/C Ratio	0.004	-	-	0.004	-
HCM Control Delay (s)	12.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	10	15	340	1	1
Future Vol, veh/h	320	10	15	340	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	337	11	16	358	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	348	0	733
Stage 1	-	-	-	-	343
Stage 2	-	-	-	-	390
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1211	-	388
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	684
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1211	-	382
Mov Cap-2 Maneuver	-	-	-	-	382
Stage 1	-	-	-	-	719
Stage 2	-	-	-	-	673

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	494	-	-	1211	-
HCM Lane V/C Ratio	0.004	-	-	0.013	-
HCM Control Delay (s)	12.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	320	0	0	355	1	1
Future Vol, veh/h	320	0	0	355	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	0	0	374	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	711 169
Stage 1	-	-	-	-	337 -
Stage 2	-	-	-	-	374 -
Critical Hdwy	-	-	-	-	6.63 6.93
Critical Hdwy Stg 1	-	-	-	-	5.83 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	-	0	0	-	383 846
Stage 1	-	0	0	-	696 -
Stage 2	-	0	0	-	695 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	383 846
Mov Cap-2 Maneuver	-	-	-	-	383 -
Stage 1	-	-	-	-	696 -
Stage 2	-	-	-	-	695 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	527	-	-
HCM Lane V/C Ratio	0.004	-	-
HCM Control Delay (s)	11.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	285	20	35	245	80	85
Future Vol, veh/h	285	20	35	245	80	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	11	2	2	2	2
Mvmt Flow	300	21	37	258	84	89

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	321	0	643 311
Stage 1	-	-	-	-	311 -
Stage 2	-	-	-	-	332 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1239	-	438 729
Stage 1	-	-	-	-	743 -
Stage 2	-	-	-	-	727 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1239	-	423 729
Mov Cap-2 Maneuver	-	-	-	-	423 -
Stage 1	-	-	-	-	743 -
Stage 2	-	-	-	-	702 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	423	729	-	-	1239	-
HCM Lane V/C Ratio	0.199	0.123	-	-	0.03	-
HCM Control Delay (s)	15.6	10.6	-	-	8	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.4	-	-	0.1	-

HCM 6th Signalized Intersection Summary
 200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	165	235	180	1035	1285	95
Future Volume (veh/h)	165	235	180	1035	1285	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1969	1870	1870
Adj Flow Rate, veh/h	174	247	189	1089	1353	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	300	347	310	2783	2228	164
Arrive On Green	0.17	0.17	0.05	0.74	0.66	0.66
Sat Flow, veh/h	1781	1585	1781	3839	3449	247
Grp Volume(v), veh/h	174	247	189	1089	715	738
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1826
Q Serve(g_s), s	10.8	17.3	3.8	12.6	27.1	27.4
Cycle Q Clear(g_c), s	10.8	17.3	3.8	12.6	27.1	27.4
Prop In Lane	1.00	1.00	1.00			0.14
Lane Grp Cap(c), veh/h	300	347	310	2783	1180	1213
V/C Ratio(X)	0.58	0.71	0.61	0.39	0.61	0.61
Avail Cap(c_a), veh/h	408	444	405	2783	1180	1213
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	43.3	12.3	5.5	11.3	11.4
Incr Delay (d2), s/veh	1.8	3.8	1.9	0.4	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.6	21.4	4.0	8.0	16.1	16.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.7	47.1	14.2	6.0	13.6	13.6
LnGrp LOS	D	D	B	A	B	B
Approach Vol, veh/h	421			1278	1453	
Approach Delay, s/veh	47.4			7.2	13.6	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.3		24.7	9.6	85.7
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		82.0		27.5	12.5	66.0
Max Q Clear Time (g_c+l1), s		14.6		19.3	5.8	29.4
Green Ext Time (p_c), s		38.0		0.9	0.3	31.7
Intersection Summary						
HCM 6th Ctrl Delay			15.5			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	165	235	180	1035	1285	95			
Future Volume (veh/h)	165	235	180	1035	1285	95			
Number	7	14	5	2	6	16			
Initial Q, 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				
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1870	1870	1969	1870	1870			
Adj Flow Rate, veh/h	174	247	189	1089	1353	100			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes		Yes						
Cap, veh/h	300	347	310	2783	2228	164			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.17	0.17	0.05	0.74	0.66	0.66			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	47.7	47.1	14.2	6.0	13.6	13.6			
Ln Grp LOS	D	D	B	A	B	B			
Approach Vol, veh/h	421			1278	1453				
Approach Delay, s/veh	47.4			7.2	13.6				
Approach LOS	D			A	B				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs			2		4	5	6		
Case No			4.0		9.0	1.2	8.0		
Phs Duration (G+Y+Rc), s			95.3		24.7	9.6	85.7		
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0		
Max Green (Gmax), s			82.0		27.5	12.5	66.0		
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3		
Max Q Clear (g_c+I1), s			14.6		19.3	5.8	29.4		
Green Ext Time (g_e), s			38.0		0.9	0.3	31.7		
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00		
Prob of Max Out (p_x)			0.34		0.13	0.10	0.85		
Left-Turn Movement Data									
Assigned Mvmt					7	5	1		
Mvmt Sat Flow, veh/h					1781	1781	0		
Through Movement Data									
Assigned Mvmt			2		4		6		
Mvmt Sat Flow, veh/h			3839		0		3449		
Right-Turn Movement Data									
Assigned Mvmt			12		14		16		
Mvmt Sat Flow, veh/h			0		1585		247		
Left Lane Group Data									
Assigned Mvmt		0	0	0	7	5	1	0	0
Lane Assignment					LL (Pr/Pm)				

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
 PM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	174	189	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1781	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	10.8	3.8	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	10.8	3.8	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1781	366	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	81.7	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	52.3	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	31.3	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	79.7	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	300	310	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.58	0.61	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	408	405	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	46.0	12.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.8	1.9	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	47.7	14.2	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	4.8	2.1	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.74	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	8.6	4.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	3.96	0.97	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1089	0	0	0	715	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	12.6	0.0	0.0	0.0	27.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	12.6	0.0	0.0	0.0	27.1	0.0	0.0
Lane Grp Cap (c), veh/h	0	2783	0	0	0	1180	0	0
V/C Ratio (X)	0.00	0.39	0.00	0.00	0.00	0.61	0.00	0.00
Avail Cap (c_a), veh/h	0	2783	0	0	0	1180	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	5.5	0.0	0.0	0.0	11.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	2.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.0	0.0	0.0	0.0	13.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	4.3	0.0	0.0	0.0	9.9	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.8	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
200: Washington Street & Martin Avenue

Existing (2022) Traffic Volumes
PM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.77	0.00	1.00	0.00	1.50	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	8.0	0.0	0.0	0.0	16.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.85	0.00	0.00	0.00	0.76	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	247	0	738	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1585	0	1826	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	17.3	0.0	27.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.3	0.0	27.4	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	1585.1	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.14	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	347	0	1213	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.71	0.00	0.61	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	444	0	1213	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	43.3	0.0	11.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.8	0.0	2.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	47.1	0.0	13.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	14.7	0.0	10.3	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.4	0.0	0.8	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.42	0.00	1.49	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	21.4	0.0	16.5	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	9.87	0.00	0.79	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	70	0	1215	1510	10
Future Vol, veh/h	0	70	0	1215	1510	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	0	1279	1589	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	795	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	330	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	330	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 330	-
HCM Lane V/C Ratio	- 0.223	-
HCM Control Delay (s)	- 19	-
HCM Lane LOS	- C	-
HCM 95th %tile Q(veh)	- 0.8	-

HCM 6th Signalized Intersection Summary
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	90	45	1165	1550	30
Future Volume (veh/h)	50	90	45	1165	1550	30
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	1781	1856	1826	1969	1870	1693
Adj Flow Rate, veh/h	53	95	47	1226	1632	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	3	5	2	2	14
Cap, veh/h	133	123	323	3120	2799	55
Arrive On Green	0.08	0.08	0.02	0.83	1.00	1.00
Sat Flow, veh/h	1697	1572	1739	3839	3658	70
Grp Volume(v), veh/h	53	95	47	1226	812	852
Grp Sat Flow(s),veh/h/ln	1697	1572	1739	1870	1777	1858
Q Serve(g_s), s	3.6	7.1	0.6	9.7	0.0	0.0
Cycle Q Clear(g_c), s	3.6	7.1	0.6	9.7	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.04
Lane Grp Cap(c), veh/h	133	123	323	3120	1395	1459
V/C Ratio(X)	0.40	0.77	0.15	0.39	0.58	0.58
Avail Cap(c_a), veh/h	361	334	456	3120	1395	1459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	54.2	2.0	2.5	0.0	0.0
Incr Delay (d2), s/veh	1.9	9.7	0.2	0.4	1.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	10.6	0.3	4.6	1.2	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.5	63.9	2.2	2.8	1.8	1.7
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	148			1273	1664	
Approach Delay, s/veh	60.6			2.8	1.7	
Approach LOS	E			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.1		13.9	5.9	100.2
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		84.0		25.5	11.5	69.0
Max Q Clear Time (g_c+l1), s		11.7		9.1	2.6	2.0
Green Ext Time (p_c), s		46.2		0.4	0.0	58.9
Intersection Summary						
HCM 6th Ctrl Delay			5.0			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Capacity Analysis
 400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	50	90	45	1165	1550	30				
Future Volume (veh/h)	50	90	45	1165	1550	30				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1781	1856	1826	1969	1870	1693				
Adj Flow Rate, veh/h	53	95	47	1226	1632	32				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	8	3	5	2	2	14				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	133	123	323	3120	2799	55				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				
Prop Arrive On Green	0.08	0.08	0.02	0.83	1.00	1.00				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	54.5	63.9	2.2	2.8	1.8	1.7				
Ln Grp LOS	D	E	A	A	A	A				
Approach Vol, veh/h	148			1273	1664					
Approach Delay, s/veh	60.6			2.8	1.7					
Approach LOS	E			A	A					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			106.1		13.9	5.9	100.2			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			84.0		25.5	11.5	69.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.2			
Max Q Clear (g_c+I1), s			11.7		9.1	2.6	2.0			
Green Ext Time (g_e), s			46.2		0.4	0.0	58.9			
Prob of Phs Call (p_c)			1.00		0.99	0.79	1.00			
Prob of Max Out (p_x)			0.43		0.00	0.00	0.84			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1697	1739	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3839		0		3658			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1572		70			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
PM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	53	47	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1697	1739	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	3.6	0.6	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	3.6	0.6	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1697	292	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	96.2	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	94.2	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	94.2	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	133	323	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.40	0.15	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	361	456	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	52.6	2.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.9	0.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	54.5	2.2	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	1.5	0.1	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.80	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	2.9	0.3	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.77	0.06	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1226	0	0	0	812	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	3120	0	0	0	1395	0	0
V/C Ratio (X)	0.00	0.39	0.00	0.00	0.00	0.58	0.00	0.00
Avail Cap (c_a), veh/h	0	3120	0	0	0	1395	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	2.8	0.0	0.0	0.0	1.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.7	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Existing (2022) Traffic Volumes
PM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	4.6	0.0	0.0	0.0	1.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	0.00	0.00	0.05	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	95	0	852	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1572	0	1858	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.04	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	123	0	1459	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.77	0.00	0.58	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	334	0	1459	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	54.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	9.7	0.0	1.7	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	63.9	0.0	1.7	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.3	0.0	0.7	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.65	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	10.6	0.0	1.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.11	0.00	0.05	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	370	0	0	280	0	0
Future Vol, veh/h	370	0	0	280	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	389	0	0	295	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	389	0	684
Stage 1	-	-	-	-	389
Stage 2	-	-	-	-	295
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1170	-	414
Stage 1	-	-	-	-	685
Stage 2	-	-	-	-	755
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1170	-	414
Mov Cap-2 Maneuver	-	-	-	-	414
Stage 1	-	-	-	-	685
Stage 2	-	-	-	-	755

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1170	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	370	1	1	270	10	1
Future Vol, veh/h	370	1	1	270	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	389	1	1	284	11	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	390	0	676
Stage 1	-	-	-	-	390
Stage 2	-	-	-	-	286
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1169	-	419
Stage 1	-	-	-	-	684
Stage 2	-	-	-	-	763
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1169	-	419
Mov Cap-2 Maneuver	-	-	-	-	419
Stage 1	-	-	-	-	684
Stage 2	-	-	-	-	762

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	-	-	1169	-
HCM Lane V/C Ratio	0.027	-	-	0.001	-
HCM Control Delay (s)	13.5	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	365	5	10	265	5	25
Future Vol, veh/h	365	5	10	265	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	384	5	11	279	5	26

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	389	0	688 387
Stage 1	-	-	-	-	387 -
Stage 2	-	-	-	-	301 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1170	-	412 661
Stage 1	-	-	-	-	686 -
Stage 2	-	-	-	-	751 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1170	-	407 661
Mov Cap-2 Maneuver	-	-	-	-	407 -
Stage 1	-	-	-	-	686 -
Stage 2	-	-	-	-	743 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	599	-	-	1170	-
HCM Lane V/C Ratio	0.053	-	-	0.009	-
HCM Control Delay (s)	11.3	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	390	0	0	275	1	10
Future Vol, veh/h	390	0	0	275	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	411	0	0	289	1	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	700	206
Stage 1	-	-	-	411	-
Stage 2	-	-	-	289	-
Critical Hdwy	-	-	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	5.43	-
Follow-up Hdwy	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	-	0	0	389	801
Stage 1	-	0	0	638	-
Stage 2	-	0	0	759	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	389	801
Mov Cap-2 Maneuver	-	-	-	389	-
Stage 1	-	-	-	638	-
Stage 2	-	-	-	759	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	731	-	-
HCM Lane V/C Ratio	0.016	-	-
HCM Control Delay (s)	10	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

CMAP YEAR 2050 TRAFFIC PROJECTIONS



Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607
312-454-0400
cmap.illinois.gov

April 4, 2022

Sami Bijonowski
Kimley-Horn
4201 Winfield Road
Suite 600
Warrenville, IL 60555

Subject: Washington Street - West Street
IDOT

Dear Ms. Bijonowski:

In response to a request made on your behalf and dated March 30, 2022, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	2016 ADT	Year 2050 ADT
S Washington St, south of Aurora Ave	29,900	32,300
S West St, north of Martin Ave	17,300	21,200
S West St, south of Martin Ave	12,700	15,600

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Hoxsie (Kimley-Horn); Rios (IDOT)
2022_ForecastTraffic\Naperville\du-16-22\du-16-22.docx



March 30, 2022

Mr. Jose Rodriguez
Chicago Metropolitan Agency for Planning
233 S. Wacker Drive, Suite 800
Chicago, IL 60606

RE: Request for 2050 Traffic Projections
S Washington Street / Martin Avenue
Naperville, Illinois

Dear Mr. Rodriguez:

Per requirements of the Illinois Department of Transportation (IDOT), Kimley-Horn is formally requesting Year 2050 traffic projections for the following roadway segments in Naperville, Illinois for use in developing an annual growth rate for area traffic volumes. For your use, the existing Average Daily Traffic volume (Year 2016 and 2020) on the relevant roadway segments are identified by IDOT as follows:

S Washington Street, south of Aurora Avenue	16,800 (2020), 29,900 (2016)
S West Street, north of Martin Avenue	9,250 (2020), 17,300 (2016)
S West Street, south of Martin Avenue	7,450 (2020), 12,700 (2016)

Please do not hesitate to contact me at (630) 447-4125 or via email at Sami.Bijonowski@kimley-horn.com should you have any questions on this matter.

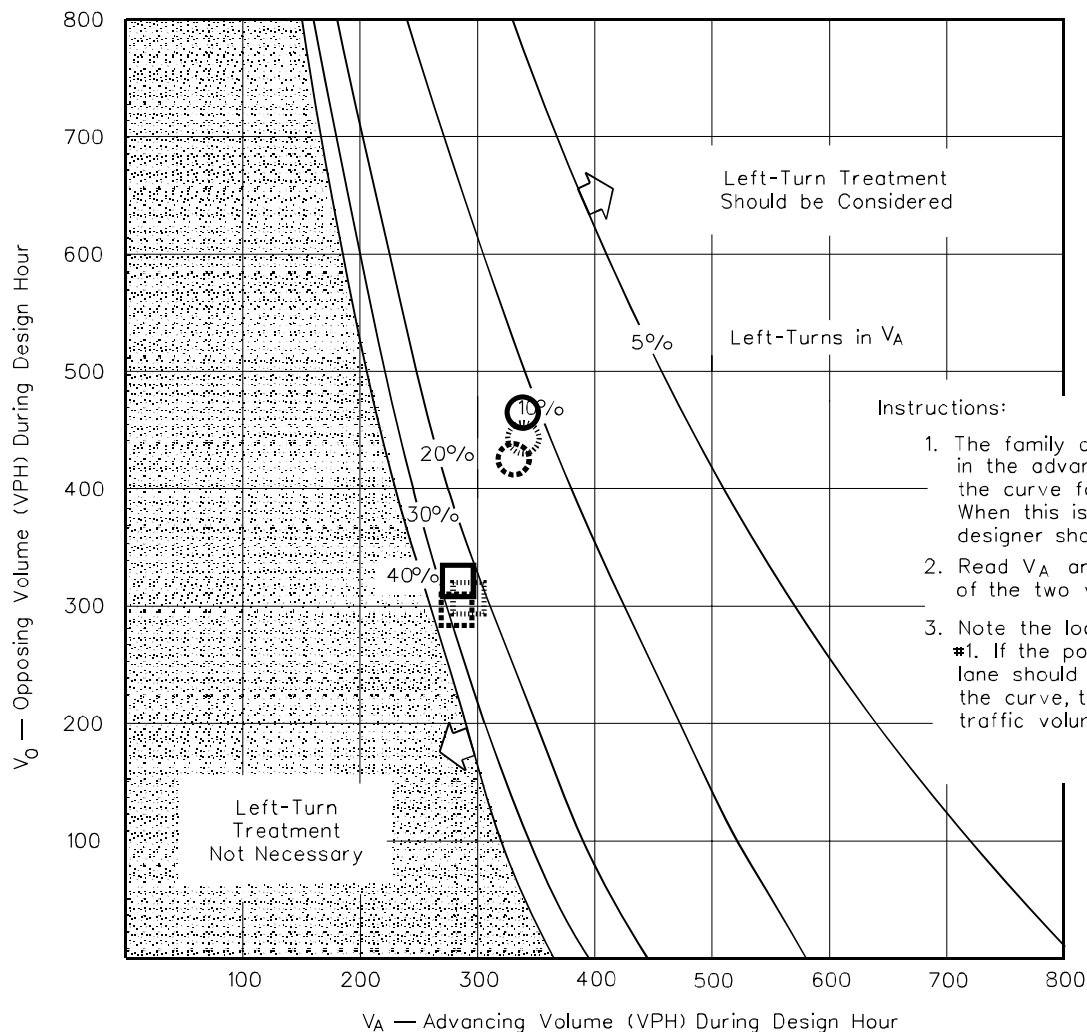
Sincerely,

Sami Bijonowski

FUTURE (2029) TURN LANE WARRANTS

Martin Avenue / Brom Drive - Westbound Left-Turn Lane

36-3.13
HARD COPIES UNCONTROLLED



V_A = Total advancing traffic volume which includes all turning traffic

V_O = Total opposing traffic volume which includes all turning traffic

Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of five, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the curve in #1. If the point is to the right of the curve, then a left-turn lane should be considered. If the point is to the left of the curve, then a left-turn lane is not warranted based on traffic volumes.

	V_A AM(PM)	V_O AM(PM)
Build	340 (270)	485 (325)
Left Turns	58% (10%)	
No Build	340 (285)	435 (310)
Left Turns	37% (11%)	
Existing	335 (280)	430 (305)
Left Turns	37% (13%)	

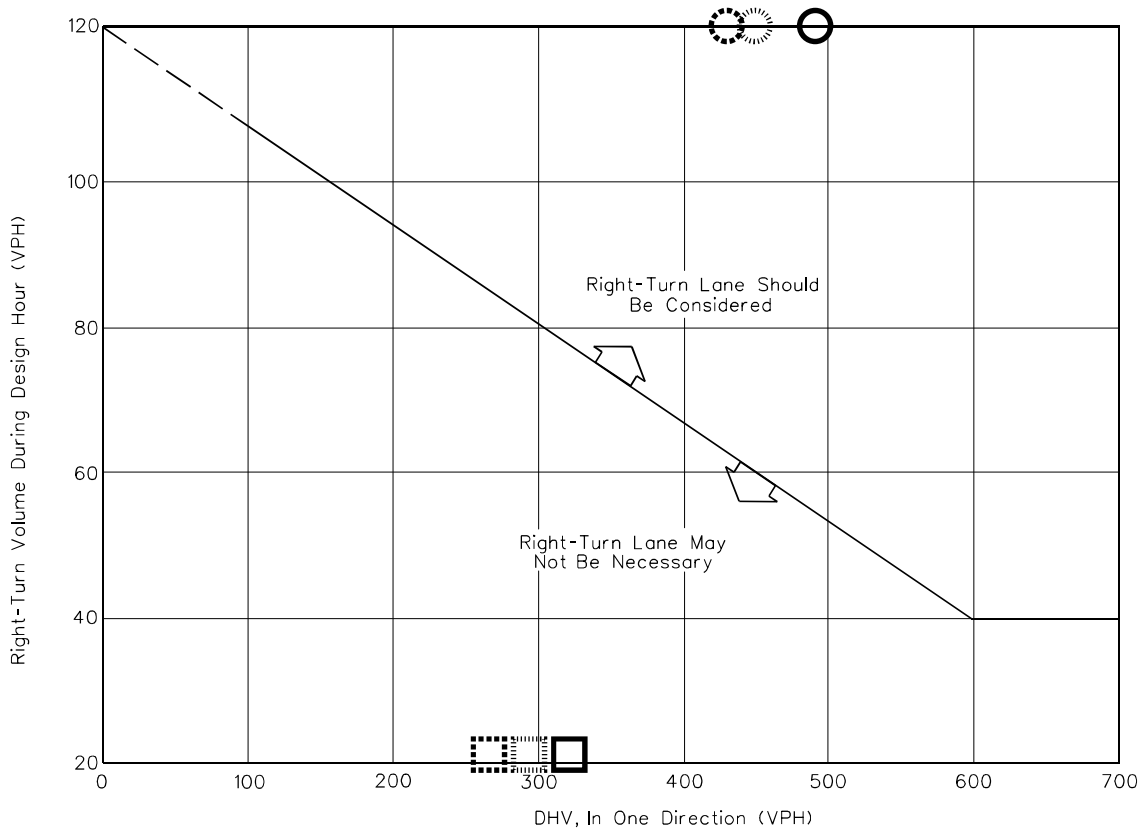
LEGEND

AM	PM	
○	□	Build
⊙	⊠	No Build
⊙	⊠	Existing

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph Design Speed)

Figure 36-3.G

Illinois
INTERSECTIONS
August 2018



Note: For highways with a design speed below 50 mph (80 km/hr), with a DHV in one direction of less than 300, and where right turns are greater than 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/hr)
 DHV (in one direction) = 250 vph
 Right Turns = 100 vph

Problem: Determine if a right-turn lane is warranted.

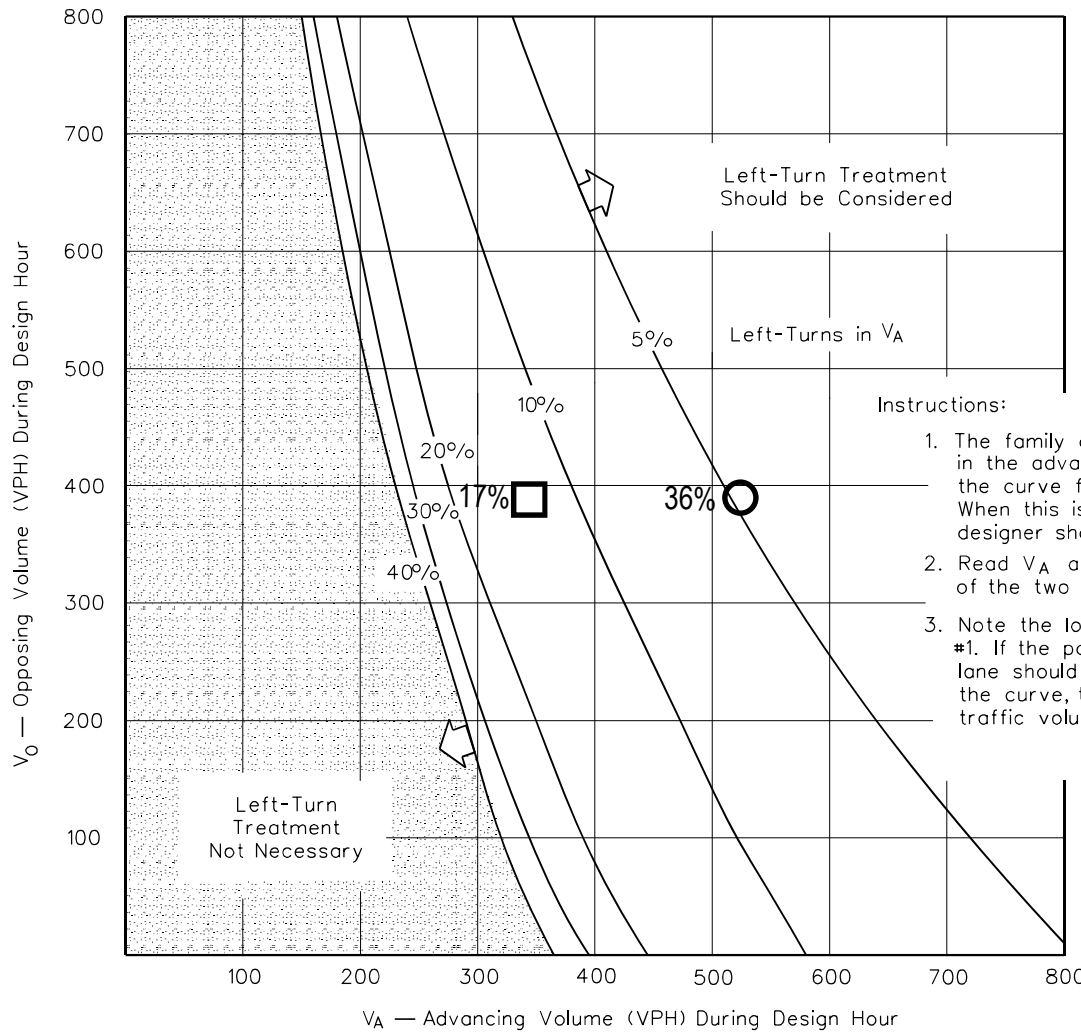
Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

LEGEND		
AM	PM	
○	□	Build
⊙	⊠	No Build
⊘	⊡	Existing

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 36-3.A

Martin Avenue / Driveway 1 - Westbound Left-Turn Lane



V_A = Total advancing traffic volume which includes all turning traffic

V_O = Total opposing traffic volume which includes all turning traffic

Instructions:

1. The family of curves represent the percent of left turns in the advancing volume (V_A). The designer should locate the curve for the actual percentage of left turns. When this is not an even increment of five, the designer should estimate where the curve lies.
2. Read V_A and V_O into the chart and locate the intersection of the two volumes.
3. Note the location of the point in #2 relative to the curve in #1. If the point is to the right of the curve, then a left-turn lane should be considered. If the point is to the left of the curve, then a left-turn lane is not warranted based on traffic volumes.

	V_A AM(PM)	V_O AM(PM)
Build	535 (325)	405 (395)
No Build	340 (285)	340 (375)
Existing	335 (280)	335 (370)

No left-turn volumes for No Build/Existing.

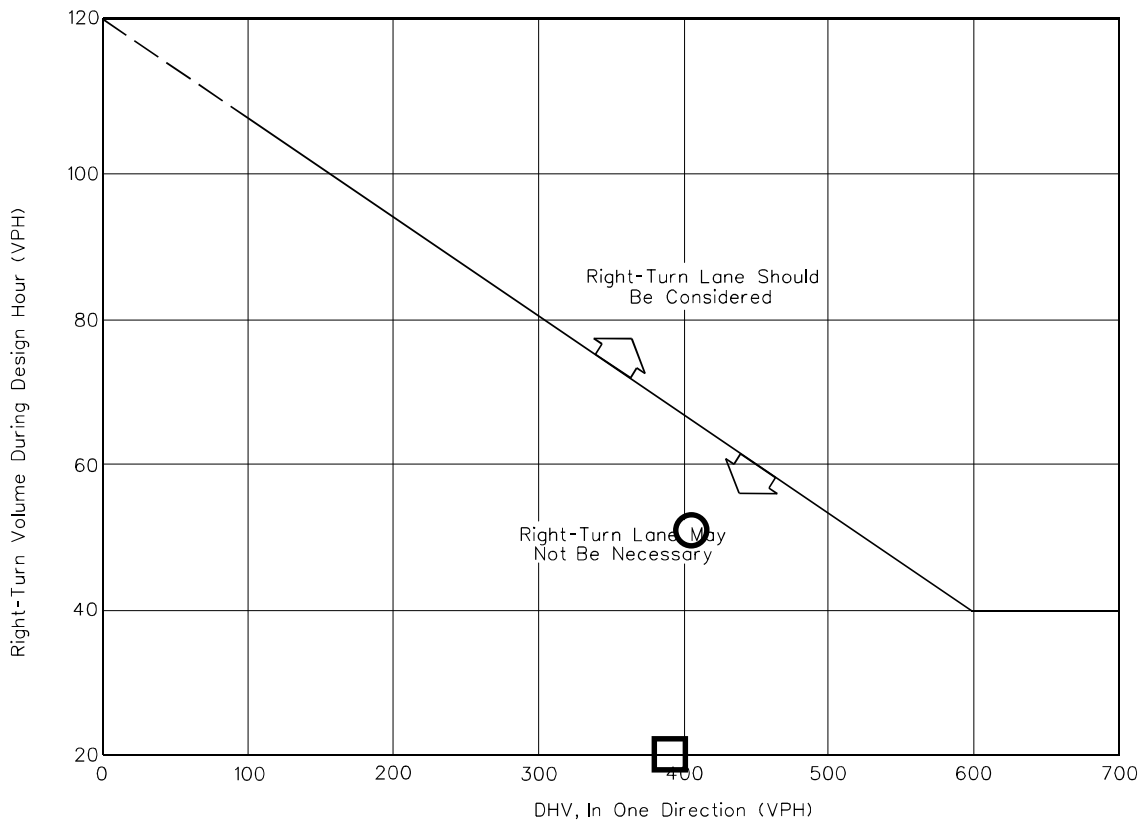
LEGEND

AM	PM	
○	□	Build
⊙	⊠	No Build
⊙	⊠	Existing

VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph Design Speed)

Figure 36-3.G

Martin Avenue / Driveway 1 - Eastbound Right-Turn Lane



Note: For highways with a design speed below 50 mph (80 km/hr), with a DHV in one direction of less than 300, and where right turns are greater than 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/hr)
 DHV (in one direction) = 250 vph
 Right Turns = 100 vph

LEGEND	
AM	PM
○	□
Build	

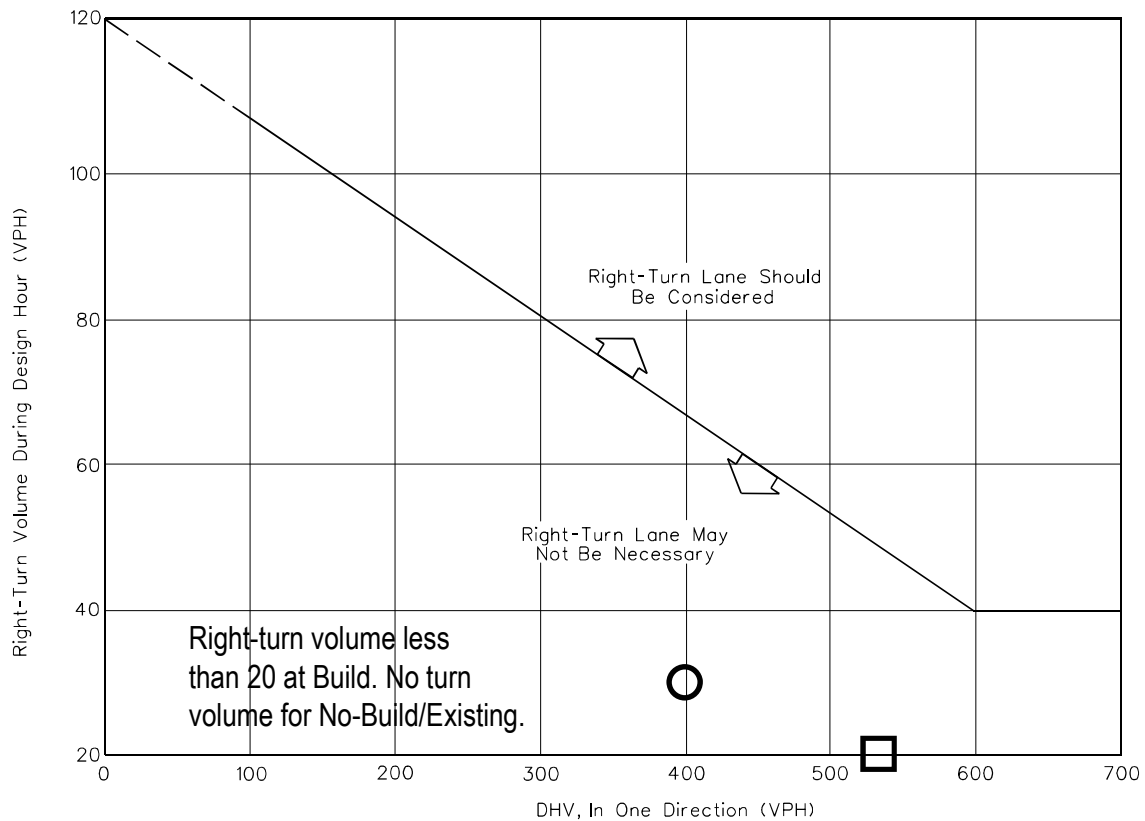
Problem: Determine if a right-turn lane is warranted.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 36-3.A

Martin Avenue / Driveway 4 - Eastbound Right-Turn Lane



Note: For highways with a design speed below 50 mph (80 km/hr), with a DHV in one direction of less than 300, and where right turns are greater than 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given: Design Speed = 35 mph (60 km/hr)
 DHV (in one direction) = 250 vph
 Right Turns = 100 vph

LEGEND	
AM	PM
○	□
Build	

Problem: Determine if a right-turn lane is warranted.

Solution: To read the vertical axis, use $100 - 20 = 80$ vph. The figure indicates that right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 36-3.A

DATA FROM ITE TRIP GENERATION MANUAL, 11TH EDITION

Land Use: 720

Medical-Dental Office Building

Description

A medical-dental office building is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. One or more private physicians or dentists generally operate this type of facility. General office building (Land Use 710) and clinic (Land Use 630) are related uses.

Land Use Subcategory

Analysis of medical-dental office building data found that trip generation rates are measurably different for sites located within or adjacent to a hospital campus and sites that are stand-alone. Data plots are presented for these two land use subcategories.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Connecticut, Kentucky, Maryland, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Virginia, Washington, and Wisconsin.

Source Numbers

104, 109, 120, 157, 184, 209, 211, 253, 287, 294, 295, 304, 357, 384, 404, 407, 423, 444, 509, 601, 715, 867, 879, 901, 902, 908, 959, 972

Medical-Dental Office Building - Stand-Alone (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 18

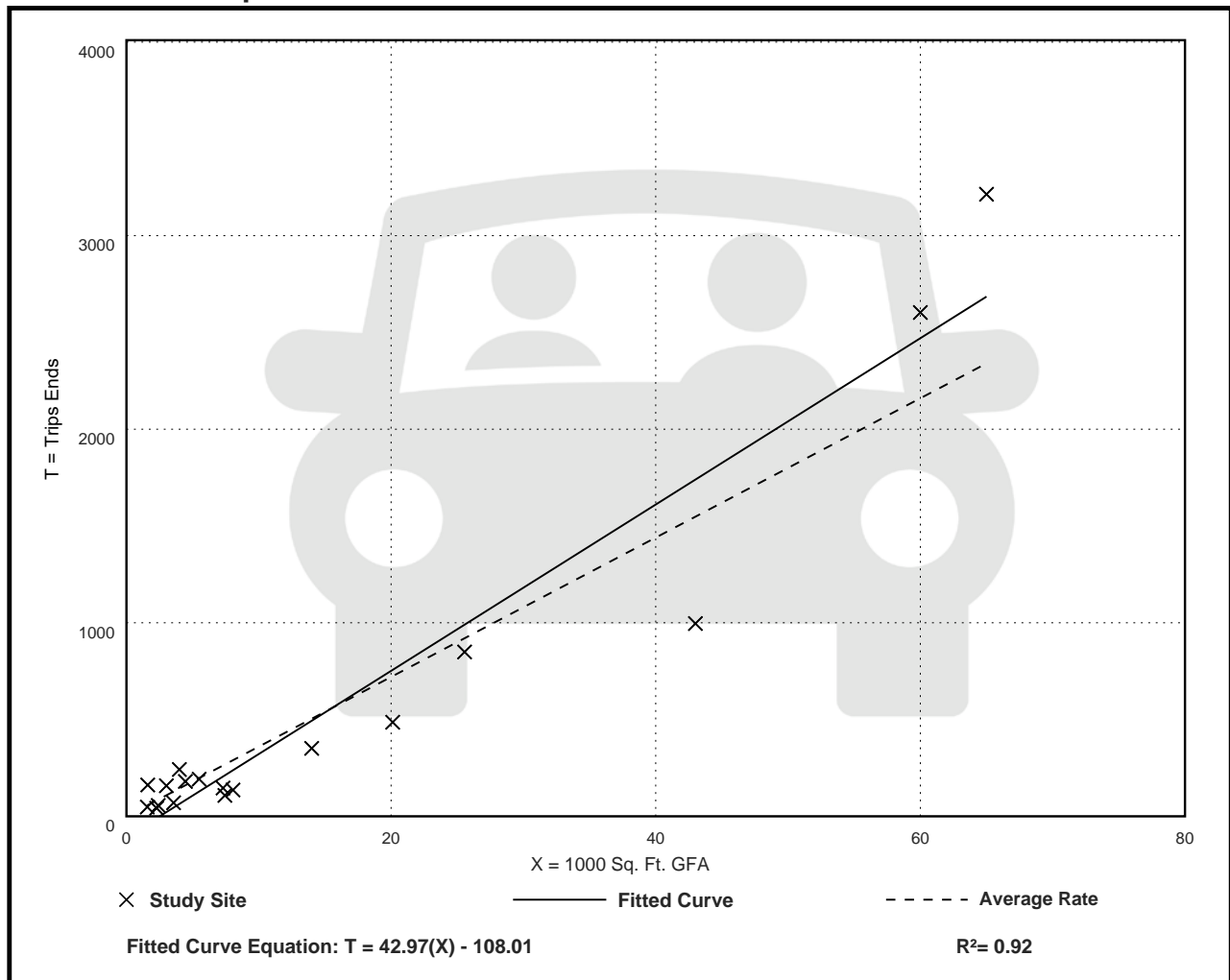
Avg. 1000 Sq. Ft. GFA: 15

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
36.00	14.52 - 100.75	13.38

Data Plot and Equation



Medical-Dental Office Building - Stand-Alone (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 24

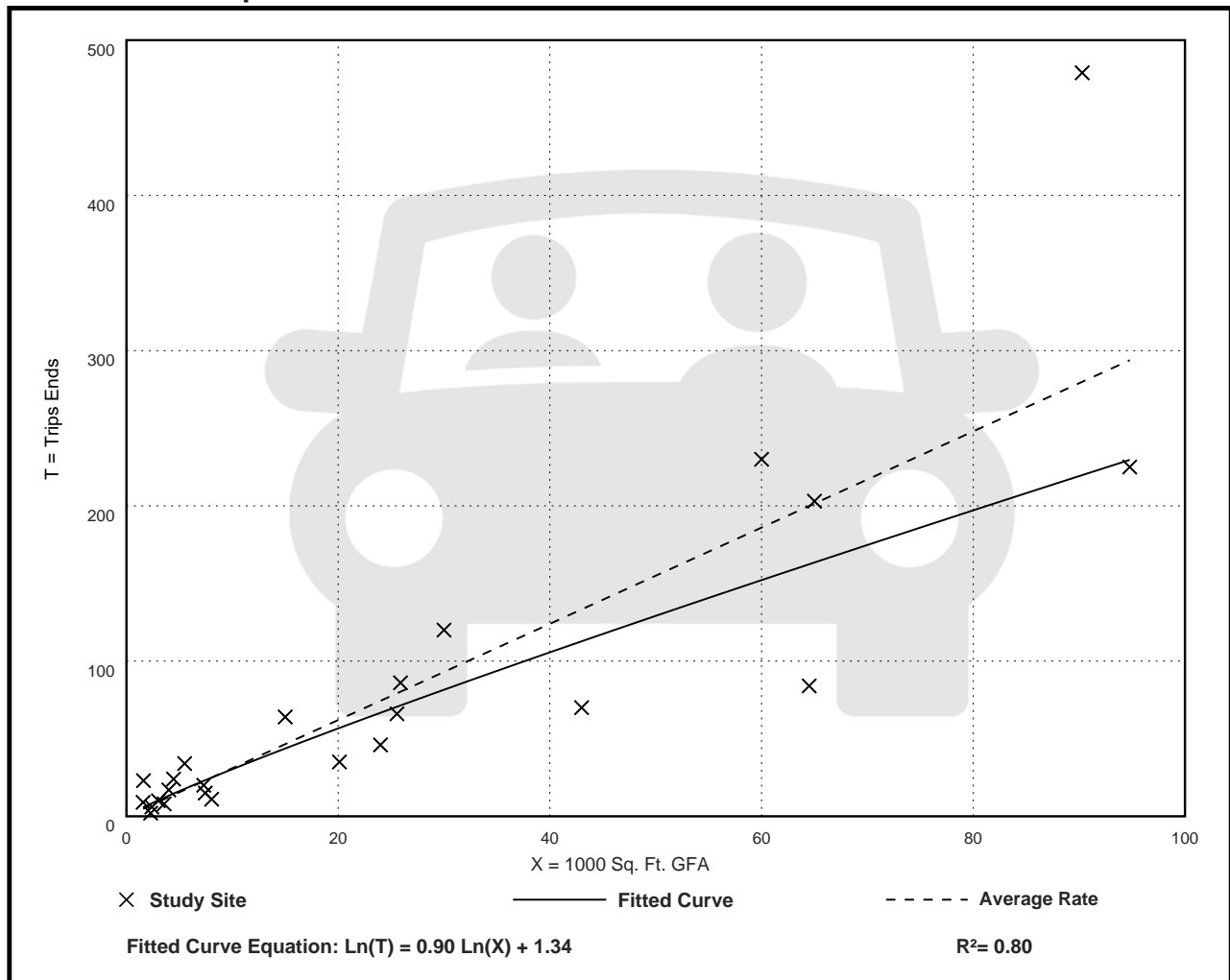
Avg. 1000 Sq. Ft. GFA: 25

Directional Distribution: 79% entering, 21% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.10	0.87 - 14.30	1.49

Data Plot and Equation



Medical-Dental Office Building - Stand-Alone (720)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 30

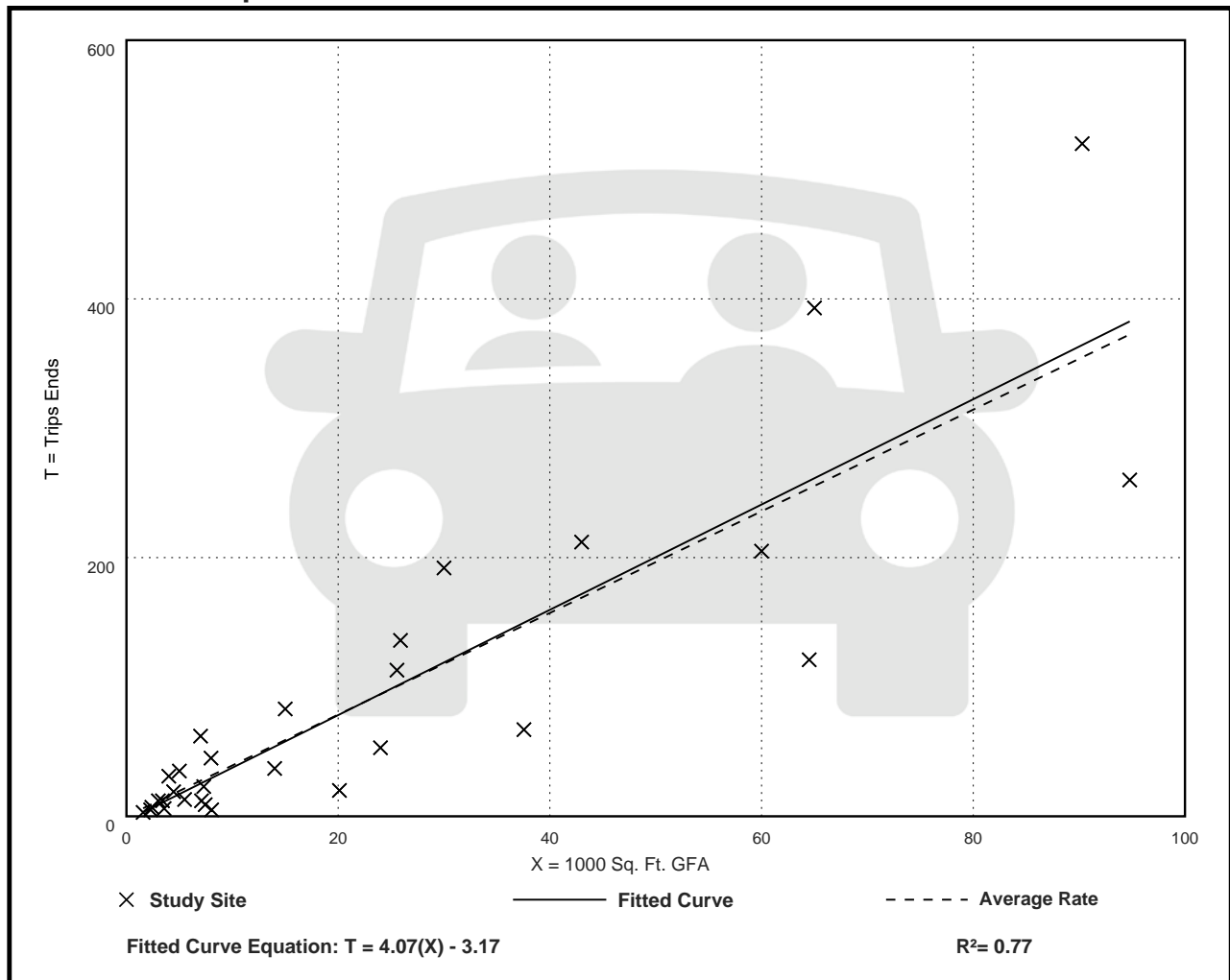
Avg. 1000 Sq. Ft. GFA: 23

Directional Distribution: 30% entering, 70% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.93	0.62 - 8.86	1.86

Data Plot and Equation



FUTURE YEAR (2029) NO-BUILD CAPACITY REPORTS

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	295	140	125	215	50	45
Future Vol, veh/h	295	140	125	215	50	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	311	147	132	226	53	47

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	458	0	875
Stage 1	-	-	-	-	385
Stage 2	-	-	-	-	490
Critical Hdwy	-	-	4.12	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	-	-	2.218	-	3.554
Pot Cap-1 Maneuver	-	-	1103	-	315
Stage 1	-	-	-	-	679
Stage 2	-	-	-	-	608
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1103	-	272
Mov Cap-2 Maneuver	-	-	-	-	272
Stage 1	-	-	-	-	679
Stage 2	-	-	-	-	525

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	272	663	-	-	1103	-
HCM Lane V/C Ratio	0.193	0.071	-	-	0.119	-
HCM Control Delay (s)	21.4	10.8	-	-	8.7	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.4	-

HCM 6th Signalized Intersection Summary
 200: Washington Street & Martin Avenue

Future (2029) No-Build Traffic Volumes
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	180	265	1410	975	95
Future Volume (veh/h)	145	180	265	1410	975	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1953	1856	1870
Adj Flow Rate, veh/h	153	189	279	1484	1026	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	2	3	3	2
Cap, veh/h	241	309	444	2885	2218	216
Arrive On Green	0.14	0.14	0.06	0.78	0.68	0.68
Sat Flow, veh/h	1781	1547	1781	3809	3338	316
Grp Volume(v), veh/h	153	189	279	1484	557	569
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1856	1763	1799
Q Serve(g_s), s	9.8	13.4	5.2	17.8	17.6	17.6
Cycle Q Clear(g_c), s	9.8	13.4	5.2	17.8	17.6	17.6
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	241	309	444	2885	1205	1229
V/C Ratio(X)	0.64	0.61	0.63	0.51	0.46	0.46
Avail Cap(c_a), veh/h	408	455	559	2885	1205	1229
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	43.7	7.5	5.0	8.8	8.8
Incr Delay (d2), s/veh	2.8	1.9	1.5	0.7	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.0	17.1	3.2	9.9	10.9	11.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	51.9	45.7	9.0	5.6	10.1	10.1
LnGrp LOS	D	D	A	A	B	B
Approach Vol, veh/h	342			1763	1126	
Approach Delay, s/veh	48.4			6.2	10.1	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		99.3		20.7	11.3	88.0
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		82.0		27.5	15.5	63.0
Max Q Clear Time (g_c+I1), s		19.8		15.4	7.2	19.6
Green Ext Time (p_c), s		50.4		0.9	0.5	29.5
Intersection Summary						
HCM 6th Ctrl Delay			12.0			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Future (2029) No-Build Traffic Volumes
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	145	180	265	1410	975	95				
Future Volume (veh/h)	145	180	265	1410	975	95				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1870	1826	1870	1953	1856	1870				
Adj Flow Rate, veh/h	153	189	279	1484	1026	100				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	5	2	3	3	2				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	241	309	444	2885	2218	216				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				
Prop Arrive On Green	0.14	0.14	0.06	0.78	0.68	0.68				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	51.9	45.7	9.0	5.6	10.1	10.1				
Ln Grp LOS	D	D	A	A	B	B				
Approach Vol, veh/h	342			1763	1126					
Approach Delay, s/veh	48.4			6.2	10.1					
Approach LOS	D			A	B					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			99.3		20.7	11.3	88.0			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			82.0		27.5	15.5	63.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3			
Max Q Clear (g_c+I1), s			19.8		15.4	7.2	19.6			
Green Ext Time (g_e), s			50.4		0.9	0.5	29.5			
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00			
Prob of Max Out (p_x)			0.70		0.01	0.06	0.59			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1781	1781	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3809		0		3338			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1547		316			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Future (2029) No-Build Traffic Volumes
 AM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	153	279	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1781	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	9.8	5.2	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	9.8	5.2	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1781	500	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	84.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	64.4	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	24.7	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	82.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	241	444	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.64	0.63	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	408	559	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	49.1	7.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.8	1.5	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	51.9	9.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	4.3	1.6	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.77	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	8.0	3.2	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	3.70	0.78	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1484	0	0	0	557	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1763	0	0
Q Serve Time (g_s), s	0.0	17.8	0.0	0.0	0.0	17.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	17.8	0.0	0.0	0.0	17.6	0.0	0.0
Lane Grp Cap (c), veh/h	0	2885	0	0	0	1205	0	0
V/C Ratio (X)	0.00	0.51	0.00	0.00	0.00	0.46	0.00	0.00
Avail Cap (c_a), veh/h	0	2885	0	0	0	1205	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	5.0	0.0	0.0	0.0	8.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.0	1.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	5.6	0.0	0.0	0.0	10.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.6	0.0	0.0	0.0	6.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
 200: Washington Street & Martin Avenue

Future (2029) No-Build Traffic Volumes
 AM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.68	0.00	1.00	0.00	1.64	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	9.9	0.0	0.0	0.0	10.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	1.06	0.00	0.00	0.00	0.52	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	189	0	569	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1547	0	1799	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	13.4	0.0	17.6	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	13.4	0.0	17.6	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	1547.4	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	7.8	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.18	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	309	0	1229	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.61	0.00	0.46	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	455	0	1229	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	43.7	0.0	8.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.9	0.0	1.3	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	45.7	0.0	10.1	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	11.3	0.0	6.4	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.48	0.00	1.63	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	17.1	0.0	11.1	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	8.07	0.00	0.53	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	35	0	1675	1090	65
Future Vol, veh/h	0	35	0	1675	1090	65
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	6	2	3	3	2
Mvmt Flow	0	37	0	1763	1147	68

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	574	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	7.02	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.36	-
Pot Cap-1 Maneuver	0	452	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	452	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 452	-
HCM Lane V/C Ratio	- 0.082	-
HCM Control Delay (s)	- 13.7	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 0.3	-

HCM 6th Signalized Intersection Summary
400: Washington Street & Osler Drive

Future (2029) No-Build Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	80	195	1645	1050	75
Future Volume (veh/h)	30	80	195	1645	1050	75
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	1693	1856	1870	1953	1856	1781
Adj Flow Rate, veh/h	32	84	205	1732	1105	79
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	3	2	3	3	8
Cap, veh/h	113	110	502	3127	2569	184
Arrive On Green	0.07	0.07	0.04	0.84	1.00	1.00
Sat Flow, veh/h	1612	1572	1781	3809	3430	238
Grp Volume(v), veh/h	32	84	205	1732	583	601
Grp Sat Flow(s),veh/h/ln	1612	1572	1781	1856	1763	1813
Q Serve(g_s), s	2.3	6.3	2.7	16.5	0.0	0.0
Cycle Q Clear(g_c), s	2.3	6.3	2.7	16.5	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	113	110	502	3127	1357	1396
V/C Ratio(X)	0.28	0.76	0.41	0.55	0.43	0.43
Avail Cap(c_a), veh/h	343	334	833	3127	1357	1396
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.9	54.8	2.0	2.8	0.0	0.0
Incr Delay (d2), s/veh	1.4	10.4	0.5	0.7	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	9.6	1.3	7.4	0.7	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.3	65.2	2.5	3.5	1.0	1.0
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	116			1937	1184	
Approach Delay, s/veh	62.2			3.4	1.0	
Approach LOS	E			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		107.1		12.9	8.7	98.4
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		84.0		25.5	27.5	53.0
Max Q Clear Time (g_c+l1), s		18.5		8.3	4.7	2.0
Green Ext Time (p_c), s		58.6		0.3	0.6	34.8
Intersection Summary						
HCM 6th Ctrl Delay			4.6			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Capacity Analysis
 400: Washington Street & Osler Drive

Future (2029) No-Build Traffic Volumes
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	30	80	195	1645	1050	75				
Future Volume (veh/h)	30	80	195	1645	1050	75				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1693	1856	1870	1953	1856	1781				
Adj Flow Rate, veh/h	32	84	205	1732	1105	79				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	14	3	2	3	3	8				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	113	110	502	3127	2569	184				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				
Prop Arrive On Green	0.07	0.07	0.04	0.84	1.00	1.00				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	54.3	65.2	2.5	3.5	1.0	1.0				
Ln Grp LOS	D	E	A	A	A	A				
Approach Vol, veh/h	116			1937	1184					
Approach Delay, s/veh	62.2			3.4	1.0					
Approach LOS	E			A	A					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			107.1		12.9	8.7	98.4			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			84.0		25.5	27.5	53.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3			
Max Q Clear (g_c+I1), s			18.5		8.3	4.7	2.0			
Green Ext Time (g_e), s			58.6		0.3	0.6	34.8			
Prob of Phs Call (p_c)			1.00		0.98	1.00	1.00			
Prob of Max Out (p_x)			0.83		0.00	0.00	0.58			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1612	1781	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3809		0		3430			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1572		238			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Future (2029) No-Build Traffic Volumes
AM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	32	205	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1612	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	2.3	2.7	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	2.3	2.7	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1612	473	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	94.4	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	92.4	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	92.4	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	113	502	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.28	0.41	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	343	833	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	52.9	2.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.5	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	54.3	2.5	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.9	0.6	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.80	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	1.7	1.3	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.48	0.26	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1732	0	0	0	583	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1763	0	0
Q Serve Time (g_s), s	0.0	16.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	16.5	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	3127	0	0	0	1357	0	0
V/C Ratio (X)	0.00	0.55	0.00	0.00	0.00	0.43	0.00	0.00
Avail Cap (c_a), veh/h	0	3127	0	0	0	1357	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.5	0.0	0.0	0.0	1.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
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Future (2029) No-Build Traffic Volumes
AM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	7.4	0.0	0.0	0.0	0.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.24	0.00	0.00	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	84	0	601	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1572	0	1813	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.13	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	110	0	1396	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.76	0.00	0.43	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	334	0	1396	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	54.8	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	10.4	0.0	1.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	65.2	0.0	1.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.69	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	9.6	0.0	0.7	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.10	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	340	0	0	340	0	0
Future Vol, veh/h	340	0	0	340	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	358	0	0	358	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	358	0	716
Stage 1	-	-	-	-	358
Stage 2	-	-	-	-	358
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1201	-	397
Stage 1	-	-	-	-	707
Stage 2	-	-	-	-	707
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1201	-	397
Mov Cap-2 Maneuver	-	-	-	-	397
Stage 1	-	-	-	-	707
Stage 2	-	-	-	-	707

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1201	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	335	5	5	340	1	1
Future Vol, veh/h	335	5	5	340	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	5	5	358	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	358	0	724
Stage 1	-	-	-	-	356
Stage 2	-	-	-	-	368
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1201	-	393
Stage 1	-	-	-	-	709
Stage 2	-	-	-	-	700
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1201	-	391
Mov Cap-2 Maneuver	-	-	-	-	391
Stage 1	-	-	-	-	709
Stage 2	-	-	-	-	697

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	499	-	-	1201	-
HCM Lane V/C Ratio	0.004	-	-	0.004	-
HCM Control Delay (s)	12.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	325	10	15	345	1	1
Future Vol, veh/h	325	10	15	345	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	2	2	2	2	2
Mvmt Flow	342	11	16	363	1	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	353	0	743
Stage 1	-	-	-	-	348
Stage 2	-	-	-	-	395
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1206	-	383
Stage 1	-	-	-	-	715
Stage 2	-	-	-	-	681
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1206	-	376
Mov Cap-2 Maneuver	-	-	-	-	376
Stage 1	-	-	-	-	715
Stage 2	-	-	-	-	669

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	488	-	-	1206	-
HCM Lane V/C Ratio	0.004	-	-	0.013	-
HCM Control Delay (s)	12.4	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	325	0	0	360	1	1
Future Vol, veh/h	325	0	0	360	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	342	0	0	379	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	721 171
Stage 1	-	-	-	-	342 -
Stage 2	-	-	-	-	379 -
Critical Hdwy	-	-	-	-	6.63 6.93
Critical Hdwy Stg 1	-	-	-	-	5.83 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	-	0	0	-	378 844
Stage 1	-	0	0	-	692 -
Stage 2	-	0	0	-	691 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	378 844
Mov Cap-2 Maneuver	-	-	-	-	378 -
Stage 1	-	-	-	-	692 -
Stage 2	-	-	-	-	691 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	522	-	-
HCM Lane V/C Ratio	0.004	-	-
HCM Control Delay (s)	11.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	290	20	35	250	80	85
Future Vol, veh/h	290	20	35	250	80	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	11	2	2	2	2
Mvmt Flow	305	21	37	263	84	89

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	326	0	653 316
Stage 1	-	-	-	-	316 -
Stage 2	-	-	-	-	337 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1234	-	432 724
Stage 1	-	-	-	-	739 -
Stage 2	-	-	-	-	723 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1234	-	417 724
Mov Cap-2 Maneuver	-	-	-	-	417 -
Stage 1	-	-	-	-	739 -
Stage 2	-	-	-	-	698 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	724	-	-	1234	-
HCM Lane V/C Ratio	0.202	0.124	-	-	0.03	-
HCM Control Delay (s)	15.8	10.7	-	-	8	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.4	-	-	0.1	-

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Future (2029) No-Build Traffic Volumes
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Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	165	240	185	1050	1305	95
Future Volume (veh/h)	165	240	185	1050	1305	95
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1969	1870	1870
Adj Flow Rate, veh/h	174	253	195	1105	1374	100
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	306	355	305	2771	2215	161
Arrive On Green	0.17	0.17	0.05	0.74	0.66	0.66
Sat Flow, veh/h	1781	1585	1781	3839	3453	244
Grp Volume(v), veh/h	174	253	195	1105	725	749
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1826
Q Serve(g_s), s	10.8	17.7	4.0	13.0	28.1	28.4
Cycle Q Clear(g_c), s	10.8	17.7	4.0	13.0	28.1	28.4
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	306	355	305	2771	1172	1204
V/C Ratio(X)	0.57	0.71	0.64	0.40	0.62	0.62
Avail Cap(c_a), veh/h	408	446	397	2771	1172	1204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	43.0	13.4	5.7	11.8	11.8
Incr Delay (d2), s/veh	1.7	3.9	2.2	0.4	2.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.5	21.8	4.6	8.2	16.6	17.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.3	46.9	15.7	6.2	14.2	14.2
LnGrp LOS	D	D	B	A	B	B
Approach Vol, veh/h	427			1300	1474	
Approach Delay, s/veh	47.1			7.6	14.2	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		94.9		25.1	9.8	85.1
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		82.0		27.5	12.5	66.0
Max Q Clear Time (g_c+l1), s		15.0		19.7	6.0	30.4
Green Ext Time (p_c), s		38.6		0.9	0.3	31.1
Intersection Summary						
HCM 6th Ctrl Delay			15.9			
HCM 6th LOS			B			

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Future (2029) No-Build Traffic Volumes
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Movement	EBL	EBR	NBL	NBT	SBT	SBR			
Lane Configurations									
Traffic Volume (veh/h)	165	240	185	1050	1305	95			
Future Volume (veh/h)	165	240	185	1050	1305	95			
Number	7	14	5	2	6	16			
Initial Q, 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				
Lanes Open During Work Zone									
Adj Sat Flow, veh/h/ln	1870	1870	1870	1969	1870	1870			
Adj Flow Rate, veh/h	174	253	195	1105	1374	100			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	2	2	2	2			
Opposing Right Turn Influence	Yes		Yes						
Cap, veh/h	306	355	305	2771	2215	161			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Prop Arrive On Green	0.17	0.17	0.05	0.74	0.66	0.66			
Unsig. Movement Delay									
Ln Grp Delay, s/veh	47.3	46.9	15.7	6.2	14.2	14.2			
Ln Grp LOS	D	D	B	A	B	B			
Approach Vol, veh/h	427			1300	1474				
Approach Delay, s/veh	47.1			7.6	14.2				
Approach LOS	D			A	B				
Timer:		1	2	3	4	5	6	7	8
Assigned Phs			2		4	5	6		
Case No			4.0		9.0	1.2	8.0		
Phs Duration (G+Y+Rc), s			94.9		25.1	9.8	85.1		
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0		
Max Green (Gmax), s			82.0		27.5	12.5	66.0		
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3		
Max Q Clear (g_c+I1), s			15.0		19.7	6.0	30.4		
Green Ext Time (g_e), s			38.6		0.9	0.3	31.1		
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00		
Prob of Max Out (p_x)			0.35		0.16	0.12	0.86		
Left-Turn Movement Data									
Assigned Mvmt					7	5	1		
Mvmt Sat Flow, veh/h					1781	1781	0		
Through Movement Data									
Assigned Mvmt			2		4		6		
Mvmt Sat Flow, veh/h			3839		0		3453		
Right-Turn Movement Data									
Assigned Mvmt			12		14		16		
Mvmt Sat Flow, veh/h			0		1585		244		
Left Lane Group Data									
Assigned Mvmt		0	0	0	7	5	1	0	0
Lane Assignment					LL (Pr/Pm)				

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Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	174	195	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1781	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	10.8	4.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	10.8	4.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1781	359	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	81.1	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	50.7	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	36.2	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	79.1	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	306	305	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.57	0.64	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	408	397	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	45.6	13.4	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	2.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	47.3	15.7	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	4.8	2.4	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.74	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	8.5	4.6	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	3.94	1.12	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1105	0	0	0	725	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	13.0	0.0	0.0	0.0	28.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	13.0	0.0	0.0	0.0	28.1	0.0	0.0
Lane Grp Cap (c), veh/h	0	2771	0	0	0	1172	0	0
V/C Ratio (X)	0.00	0.40	0.00	0.00	0.00	0.62	0.00	0.00
Avail Cap (c_a), veh/h	0	2771	0	0	0	1172	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	5.7	0.0	0.0	0.0	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	2.5	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.2	0.0	0.0	0.0	14.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	4.5	0.0	0.0	0.0	10.4	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.8	0.0	0.0

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3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.76	0.00	1.00	0.00	1.49	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	8.2	0.0	0.0	0.0	16.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.88	0.00	0.00	0.00	0.79	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	253	0	749	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1585	0	1826	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	17.7	0.0	28.4	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	17.7	0.0	28.4	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	1585.1	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.13	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	355	0	1204	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.71	0.00	0.62	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	446	0	1204	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	43.0	0.0	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	3.9	0.0	2.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	46.9	0.0	14.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	15.0	0.0	10.8	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.4	0.0	0.8	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.42	0.00	1.48	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	21.8	0.0	17.2	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	10.06	0.00	0.81	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	15.9
HCM 6th LOS	B

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↑↑	↑↑	
Traffic Vol, veh/h	0	70	0	1235	1535	10
Future Vol, veh/h	0	70	0	1235	1535	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	0	1300	1616	11

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	-	808	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	324	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	-	324	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT EBLn1	SBT
Capacity (veh/h)	- 324	-
HCM Lane V/C Ratio	- 0.227	-
HCM Control Delay (s)	- 19.4	-
HCM Lane LOS	- C	-
HCM 95th %tile Q(veh)	- 0.9	-

HCM 6th Signalized Intersection Summary
 400: Washington Street & Osler Drive

Future (2029) No-Build Traffic Volumes
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	90	45	1185	1575	30
Future Volume (veh/h)	50	90	45	1185	1575	30
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	1781	1856	1826	1969	1870	1693
Adj Flow Rate, veh/h	53	95	47	1247	1658	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	3	5	2	2	14
Cap, veh/h	133	123	318	3120	2800	54
Arrive On Green	0.08	0.08	0.02	0.83	1.00	1.00
Sat Flow, veh/h	1697	1572	1739	3839	3660	69
Grp Volume(v), veh/h	53	95	47	1247	825	865
Grp Sat Flow(s),veh/h/ln	1697	1572	1739	1870	1777	1858
Q Serve(g_s), s	3.6	7.1	0.6	10.0	0.0	0.0
Cycle Q Clear(g_c), s	3.6	7.1	0.6	10.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.04
Lane Grp Cap(c), veh/h	133	123	318	3120	1395	1459
V/C Ratio(X)	0.40	0.77	0.15	0.40	0.59	0.59
Avail Cap(c_a), veh/h	361	334	450	3120	1395	1459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.6	54.2	2.0	2.5	0.0	0.0
Incr Delay (d2), s/veh	1.9	9.7	0.2	0.4	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	10.6	0.3	4.8	1.3	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.5	63.9	2.2	2.9	1.8	1.8
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	148			1294	1690	
Approach Delay, s/veh	60.6			2.8	1.8	
Approach LOS	E			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		106.1		13.9	5.9	100.2
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		84.0		25.5	11.5	69.0
Max Q Clear Time (g_c+l1), s		12.0		9.1	2.6	2.0
Green Ext Time (p_c), s		47.0		0.4	0.0	59.5
Intersection Summary						
HCM 6th Ctrl Delay			5.0			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Capacity Analysis
 400: Washington Street & Osler Drive

Future (2029) No-Build Traffic Volumes
 PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	50	90	45	1185	1575	30				
Future Volume (veh/h)	50	90	45	1185	1575	30				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1781	1856	1826	1969	1870	1693				
Adj Flow Rate, veh/h	53	95	47	1247	1658	32				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	8	3	5	2	2	14				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	133	123	318	3120	2800	54				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				
Prop Arrive On Green	0.08	0.08	0.02	0.83	1.00	1.00				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	54.5	63.9	2.2	2.9	1.8	1.8				
Ln Grp LOS	D	E	A	A	A	A				
Approach Vol, veh/h	148			1294	1690					
Approach Delay, s/veh	60.6			2.8	1.8					
Approach LOS	E			A	A					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			106.1		13.9	5.9	100.2			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			84.0		25.5	11.5	69.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.2			
Max Q Clear (g_c+I1), s			12.0		9.1	2.6	2.0			
Green Ext Time (g_e), s			47.0		0.4	0.0	59.5			
Prob of Phs Call (p_c)			1.00		0.99	0.79	1.00			
Prob of Max Out (p_x)			0.46		0.00	0.00	0.85			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1697	1739	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3839		0		3660			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1572		69			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Future (2029) No-Build Traffic Volumes
PM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	53	47	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1697	1739	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	3.6	0.6	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	3.6	0.6	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1697	284	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	96.2	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	94.2	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	94.2	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	133	318	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.40	0.15	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	361	450	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	52.6	2.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.9	0.2	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	54.5	2.2	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	1.5	0.1	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.80	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	2.9	0.3	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.77	0.06	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1247	0	0	0	825	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	3120	0	0	0	1395	0	0
V/C Ratio (X)	0.00	0.40	0.00	0.00	0.00	0.59	0.00	0.00
Avail Cap (c_a), veh/h	0	3120	0	0	0	1395	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	2.9	0.0	0.0	0.0	1.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.7	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
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Future (2029) No-Build Traffic Volumes
PM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	4.8	0.0	0.0	0.0	1.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.15	0.00	0.00	0.00	0.05	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	95	0	865	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1572	0	1858	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.04	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	123	0	1459	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.77	0.00	0.59	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	334	0	1459	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	54.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	9.7	0.0	1.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	63.9	0.0	1.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.3	0.0	0.7	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.65	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	10.6	0.0	1.3	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.11	0.00	0.05	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	375	0	0	285	0	0
Future Vol, veh/h	375	0	0	285	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	395	0	0	300	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	395	0	695
Stage 1	-	-	-	-	395
Stage 2	-	-	-	-	300
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1164	-	408
Stage 1	-	-	-	-	681
Stage 2	-	-	-	-	752
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1164	-	408
Mov Cap-2 Maneuver	-	-	-	-	408
Stage 1	-	-	-	-	681
Stage 2	-	-	-	-	752

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1164	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	375	1	1	275	10	1
Future Vol, veh/h	375	1	1	275	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	395	1	1	289	11	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	396	0	687
Stage 1	-	-	-	-	396
Stage 2	-	-	-	-	291
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1163	-	413
Stage 1	-	-	-	-	680
Stage 2	-	-	-	-	759
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1163	-	413
Mov Cap-2 Maneuver	-	-	-	-	413
Stage 1	-	-	-	-	680
Stage 2	-	-	-	-	758

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	427	-	-	1163	-
HCM Lane V/C Ratio	0.027	-	-	0.001	-
HCM Control Delay (s)	13.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	370	5	10	270	5	25
Future Vol, veh/h	370	5	10	270	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	389	5	11	284	5	26

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	394	0	698
Stage 1	-	-	-	-	392
Stage 2	-	-	-	-	306
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1165	-	407
Stage 1	-	-	-	-	683
Stage 2	-	-	-	-	747
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1165	-	403
Mov Cap-2 Maneuver	-	-	-	-	403
Stage 1	-	-	-	-	683
Stage 2	-	-	-	-	739

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	595	-	-	1165	-
HCM Lane V/C Ratio	0.053	-	-	0.009	-
HCM Control Delay (s)	11.4	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑	
Traffic Vol, veh/h	395	0	0	280	1	10
Future Vol, veh/h	395	0	0	280	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	416	0	0	295	1	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	711 208
Stage 1	-	-	-	-	416 -
Stage 2	-	-	-	-	295 -
Critical Hdwy	-	-	-	-	6.63 6.93
Critical Hdwy Stg 1	-	-	-	-	5.83 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	-	-	3.519 3.319
Pot Cap-1 Maneuver	-	0	0	-	383 799
Stage 1	-	0	0	-	635 -
Stage 2	-	0	0	-	755 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	383 799
Mov Cap-2 Maneuver	-	-	-	-	383 -
Stage 1	-	-	-	-	635 -
Stage 2	-	-	-	-	755 -

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

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	727	-	-
HCM Lane V/C Ratio	0.016	-	-
HCM Control Delay (s)	10	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

FUTURE YEAR (2029) BUILD CAPACITY REPORTS

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	345	140	125	215	50	60
Future Vol, veh/h	345	140	125	215	50	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	6	2
Mvmt Flow	363	147	132	226	53	63

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	510	0	927 437
Stage 1	-	-	-	-	437 -
Stage 2	-	-	-	-	490 -
Critical Hdwy	-	-	4.12	-	6.46 6.22
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	-	-	2.218	-	3.554 3.318
Pot Cap-1 Maneuver	-	-	1055	-	293 620
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	608 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1055	-	251 620
Mov Cap-2 Maneuver	-	-	-	-	251 -
Stage 1	-	-	-	-	643 -
Stage 2	-	-	-	-	521 -

Approach	EB	WB	NB
HCM Control Delay, s	0	3.3	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	251	620	-	-	1055	-
HCM Lane V/C Ratio	0.21	0.102	-	-	0.125	-
HCM Control Delay (s)	23.1	11.5	-	-	8.9	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	0.3	-	-	0.4	-

HCM 6th Signalized Intersection Summary
200: Washington Street & Martin Avenue

Future (2029) Build Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	160	225	320	1410	910	215
Future Volume (veh/h)	160	225	320	1410	910	215
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1826	1870	1953	1856	1870
Adj Flow Rate, veh/h	168	237	337	1484	958	226
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	5	2	3	3	2
Cap, veh/h	287	377	422	2788	1811	427
Arrive On Green	0.16	0.16	0.08	0.75	0.64	0.64
Sat Flow, veh/h	1781	1547	1781	3809	2924	667
Grp Volume(v), veh/h	168	237	337	1484	596	588
Grp Sat Flow(s),veh/h/ln	1781	1547	1781	1856	1763	1736
Q Serve(g_s), s	10.5	16.4	7.3	19.9	22.1	22.2
Cycle Q Clear(g_c), s	10.5	16.4	7.3	19.9	22.1	22.2
Prop In Lane	1.00	1.00	1.00			0.38
Lane Grp Cap(c), veh/h	287	377	422	2788	1128	1110
V/C Ratio(X)	0.58	0.63	0.80	0.53	0.53	0.53
Avail Cap(c_a), veh/h	408	482	505	2788	1128	1110
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.77	0.77	1.00	1.00
Uniform Delay (d), s/veh	46.6	40.5	13.5	6.2	11.8	11.8
Incr Delay (d2), s/veh	1.9	1.7	5.8	0.6	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.4	20.2	8.4	10.7	13.6	13.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.5	42.3	19.3	6.8	13.5	13.6
LnGrp LOS	D	D	B	A	B	B
Approach Vol, veh/h	405			1821	1184	
Approach Delay, s/veh	44.8			9.1	13.6	
Approach LOS	D			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		96.1		23.9	13.4	82.8
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		82.0		27.5	15.5	63.0
Max Q Clear Time (g_c+I1), s		21.9		18.4	9.3	24.2
Green Ext Time (p_c), s		49.0		0.9	0.6	28.6
Intersection Summary						
HCM 6th Ctrl Delay			14.9			
HCM 6th LOS			B			

HCM 6th Signalized Intersection Capacity Analysis
200: Washington Street & Martin Avenue

Future (2029) Build Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	160	225	320	1410	910	215				
Future Volume (veh/h)	160	225	320	1410	910	215				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1870	1826	1870	1953	1856	1870				
Adj Flow Rate, veh/h	168	237	337	1484	958	226				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	5	2	3	3	2				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	287	377	422	2788	1811	427				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				
Prop Arrive On Green	0.16	0.16	0.08	0.75	0.64	0.64				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	48.5	42.3	19.3	6.8	13.5	13.6				
Ln Grp LOS	D	D	B	A	B	B				
Approach Vol, veh/h	405			1821	1184					
Approach Delay, s/veh	44.8			9.1	13.6					
Approach LOS	D			A	B					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			96.1		23.9	13.4	82.8			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			82.0		27.5	15.5	63.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3			
Max Q Clear (g_c+I1), s			21.9		18.4	9.3	24.2			
Green Ext Time (g_e), s			49.0		0.9	0.6	28.6			
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00			
Prob of Max Out (p_x)			0.71		0.08	0.26	0.68			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1781	1781	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3809		0		2924			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1547		667			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
200: Washington Street & Martin Avenue

Future (2029) Build Traffic Volumes
AM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	168	337	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1781	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	10.5	7.3	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	10.5	7.3	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1781	473	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	78.8	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	54.6	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	54.6	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	76.8	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	287	422	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.58	0.80	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	408	505	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.77	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	46.6	13.5	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.9	5.8	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	48.5	19.3	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	4.7	4.5	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.7	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.75	1.63	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	8.4	8.4	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	4.64	2.04	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1484	0	0	0	596	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1763	0	0
Q Serve Time (g_s), s	0.0	19.9	0.0	0.0	0.0	22.1	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	19.9	0.0	0.0	0.0	22.1	0.0	0.0
Lane Grp Cap (c), veh/h	0	2788	0	0	0	1128	0	0
V/C Ratio (X)	0.00	0.53	0.00	0.00	0.00	0.53	0.00	0.00
Avail Cap (c_a), veh/h	0	2788	0	0	0	1128	0	0
Upstream Filter (I)	0.00	0.77	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	6.2	0.0	0.0	0.0	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	6.8	0.0	0.0	0.0	13.5	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	6.7	0.0	0.0	0.0	8.2	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.6	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
200: Washington Street & Martin Avenue

Future (2029) Build Traffic Volumes
AM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.55	0.00	1.00	0.00	1.55	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	10.7	0.0	0.0	0.0	13.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.30	0.00	0.00	0.00	0.65	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	237	0	588	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1547	0	1736	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	16.4	0.0	22.2	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	16.4	0.0	22.2	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	1547.4	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.38	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	377	0	1110	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.63	0.00	0.53	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	482	0	1110	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	40.5	0.0	11.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	1.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	42.3	0.0	13.6	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	13.9	0.0	8.1	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.0	0.6	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.44	0.00	1.56	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	20.2	0.0	13.5	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	11.42	0.00	0.65	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary
400: Washington Street & Osler Drive

Future (2029) Build Traffic Volumes
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	30	95	210	1700	1055	80
Future Volume (veh/h)	30	95	210	1700	1055	80
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	1693	1856	1870	1953	1856	1781
Adj Flow Rate, veh/h	32	100	221	1789	1111	84
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	14	3	2	3	3	8
Cap, veh/h	130	127	498	3087	2509	190
Arrive On Green	0.08	0.08	0.05	0.83	1.00	1.00
Sat Flow, veh/h	1612	1572	1781	3809	3415	251
Grp Volume(v), veh/h	32	100	221	1789	589	606
Grp Sat Flow(s),veh/h/ln	1612	1572	1781	1856	1763	1810
Q Serve(g_s), s	2.2	7.5	3.1	18.8	0.0	0.0
Cycle Q Clear(g_c), s	2.2	7.5	3.1	18.8	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.14
Lane Grp Cap(c), veh/h	130	127	498	3087	1331	1367
V/C Ratio(X)	0.25	0.79	0.44	0.58	0.44	0.44
Avail Cap(c_a), veh/h	343	334	822	3087	1331	1367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.80	0.80
Uniform Delay (d), s/veh	51.7	54.1	2.3	3.3	0.0	0.0
Incr Delay (d2), s/veh	1.0	10.3	0.6	0.8	0.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	11.0	1.6	8.7	0.6	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	52.7	64.4	2.9	4.1	0.9	0.8
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	132			2010	1195	
Approach Delay, s/veh	61.6			3.9	0.8	
Approach LOS	E			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		105.8		14.2	9.2	96.6
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		84.0		25.5	27.5	53.0
Max Q Clear Time (g_c+I1), s		20.8		9.5	5.1	2.0
Green Ext Time (p_c), s		57.7		0.3	0.6	35.1
Intersection Summary						
HCM 6th Ctrl Delay			5.1			
HCM 6th LOS			A			

HCM 6th Signalized Intersection Capacity Analysis
 400: Washington Street & Osler Drive

Future (2029) Build Traffic Volumes
 AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	30	95	210	1700	1055	80				
Future Volume (veh/h)	30	95	210	1700	1055	80				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1693	1856	1870	1953	1856	1781				
Adj Flow Rate, veh/h	32	100	221	1789	1111	84				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	14	3	2	3	3	8				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	130	127	498	3087	2509	190				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33				
Prop Arrive On Green	0.08	0.08	0.05	0.83	1.00	1.00				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	52.7	64.4	2.9	4.1	0.9	0.8				
Ln Grp LOS	D	E	A	A	A	A				
Approach Vol, veh/h	132			2010	1195					
Approach Delay, s/veh	61.6			3.9	0.8					
Approach LOS	E			A	A					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			105.8		14.2	9.2	96.6			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			84.0		25.5	27.5	53.0			
Max Allow Headway (MAH), s			9.2		4.1	3.8	9.3			
Max Q Clear (g_c+I1), s			20.8		9.5	5.1	2.0			
Green Ext Time (g_e), s			57.7		0.3	0.6	35.1			
Prob of Phs Call (p_c)			1.00		0.99	1.00	1.00			
Prob of Max Out (p_x)			0.86		0.00	0.00	0.59			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1612	1781	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3809		0		3415			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1572		251			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Future (2029) Build Traffic Volumes
AM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	32	221	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1612	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	2.2	3.1	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	2.2	3.1	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1612	468	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	92.6	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	90.6	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	90.6	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	130	498	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.25	0.44	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	343	822	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	51.7	2.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.0	0.6	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	52.7	2.9	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	0.9	0.8	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.80	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	1.7	1.6	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.47	0.32	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1789	0	0	0	589	0	0
Grp Sat Flow (s), veh/h/ln	0	1856	0	0	0	1763	0	0
Q Serve Time (g_s), s	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	18.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	3087	0	0	0	1331	0	0
V/C Ratio (X)	0.00	0.58	0.00	0.00	0.00	0.44	0.00	0.00
Avail Cap (c_a), veh/h	0	3087	0	0	0	1331	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.80	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.0	0.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	4.1	0.0	0.0	0.0	0.9	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Future (2029) Build Traffic Volumes
AM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.73	0.00	1.00	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	8.7	0.0	0.0	0.0	0.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.28	0.00	0.00	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	100	0	606	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1572	0	1810	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	7.5	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.14	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	127	0	1367	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.79	0.00	0.44	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	334	0	1367	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.80	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	54.1	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	10.3	0.0	0.8	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	64.4	0.0	0.8	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.4	0.0	0.3	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.63	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	11.0	0.0	0.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.11	0.00	0.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	5.1
HCM 6th LOS	A

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	355	50	195	340	10	45
Future Vol, veh/h	355	50	195	340	10	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	374	53	205	358	11	47

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	427	0	1169 401
Stage 1	-	-	-	-	401 -
Stage 2	-	-	-	-	768 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1132	-	213 649
Stage 1	-	-	-	-	676 -
Stage 2	-	-	-	-	458 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1132	-	174 649
Mov Cap-2 Maneuver	-	-	-	-	174 -
Stage 1	-	-	-	-	676 -
Stage 2	-	-	-	-	375 -

Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	174	649	-	-	1132	-
HCM Lane V/C Ratio	0.06	0.073	-	-	0.181	-
HCM Control Delay (s)	27	11	-	-	8.9	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.7	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑		↑
Traffic Vol, veh/h	370	30	0	535	0	15
Future Vol, veh/h	370	30	0	535	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	389	32	0	563	0	16

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	211
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	-	0	-	0	795
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	795
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	795	-	-	-
HCM Lane V/C Ratio	0.02	-	-	-
HCM Control Delay (s)	9.6	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	305	20	35	235	80	90
Future Vol, veh/h	305	20	35	235	80	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	11	2	2	2	2
Mvmt Flow	321	21	37	247	84	95

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	342	0	653
Stage 1	-	-	-	-	332
Stage 2	-	-	-	-	321
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1217	-	432
Stage 1	-	-	-	-	727
Stage 2	-	-	-	-	735
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1217	-	417
Mov Cap-2 Maneuver	-	-	-	-	417
Stage 1	-	-	-	-	727
Stage 2	-	-	-	-	709

Approach	EB	WB	NB
HCM Control Delay, s	0	1	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	417	710	-	-	1217	-
HCM Lane V/C Ratio	0.202	0.133	-	-	0.03	-
HCM Control Delay (s)	15.8	10.9	-	-	8.1	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.5	-	-	0.1	-

HCM 6th Signalized Intersection Summary
200: Washington Street & Martin Avenue

Future (2029) Build Traffic Volumes
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	215	355	200	1050	1295	125
Future Volume (veh/h)	215	355	200	1050	1295	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1969	1870	1870
Adj Flow Rate, veh/h	226	374	211	1105	1363	132
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	408	463	277	2556	1936	187
Arrive On Green	0.23	0.23	0.06	0.68	0.59	0.59
Sat Flow, veh/h	1781	1585	1781	3839	3368	316
Grp Volume(v), veh/h	226	374	211	1105	737	758
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1870	1777	1814
Q Serve(g_s), s	13.4	26.2	5.3	15.9	34.7	35.3
Cycle Q Clear(g_c), s	13.4	26.2	5.3	15.9	34.7	35.3
Prop In Lane	1.00	1.00	1.00			0.17
Lane Grp Cap(c), veh/h	408	463	277	2556	1050	1072
V/C Ratio(X)	0.55	0.81	0.76	0.43	0.70	0.71
Avail Cap(c_a), veh/h	408	463	350	2556	1050	1072
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.91	0.91	1.00	1.00
Uniform Delay (d), s/veh	40.8	39.3	20.7	8.5	17.1	17.2
Incr Delay (d2), s/veh	1.6	10.2	6.7	0.5	3.9	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.1	30.4	7.4	10.1	20.9	21.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	42.5	49.5	27.4	9.0	21.0	21.2
LnGrp LOS	D	D	C	A	C	C
Approach Vol, veh/h	600			1316	1495	
Approach Delay, s/veh	46.9			12.0	21.1	
Approach LOS	D			B	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		32.0	11.1	76.9
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		82.0		27.5	12.5	66.0
Max Q Clear Time (g_c+I1), s		17.9		28.2	7.3	37.3
Green Ext Time (p_c), s		37.7		0.0	0.3	25.9
Intersection Summary						
HCM 6th Ctrl Delay			22.1			
HCM 6th LOS			C			

HCM 6th Signalized Intersection Capacity Analysis
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Future (2029) Build Traffic Volumes
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	215	355	200	1050	1295	125				
Future Volume (veh/h)	215	355	200	1050	1295	125				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1870	1870	1870	1969	1870	1870				
Adj Flow Rate, veh/h	226	374	211	1105	1363	132				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	2	2	2	2	2	2				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	408	463	277	2556	1936	187				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				
Prop Arrive On Green	0.23	0.23	0.06	0.68	0.59	0.59				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	42.5	49.5	27.4	9.0	21.0	21.2				
Ln Grp LOS	D	D	C	A	C	C				
Approach Vol, veh/h	600			1316	1495					
Approach Delay, s/veh	46.9			12.0	21.1					
Approach LOS	D			B	C					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			88.0		32.0	11.1	76.9			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			82.0		27.5	12.5	66.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.3			
Max Q Clear (g_c+I1), s			17.9		28.2	7.3	37.3			
Green Ext Time (g_e), s			37.7		0.0	0.3	25.9			
Prob of Phs Call (p_c)			1.00		1.00	1.00	1.00			
Prob of Max Out (p_x)			0.37		1.00	0.35	0.90			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1781	1781	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3839		0		3368			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1585		316			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

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Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	226	211	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1781	1781	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	13.4	5.3	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	13.4	5.3	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1781	352	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	72.9	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	35.7	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	35.7	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	70.9	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	408	277	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.55	0.76	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	408	350	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.91	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	40.8	20.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.6	6.7	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	42.5	27.4	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	5.9	3.7	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.2	0.5	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.66	1.76	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	10.1	7.4	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	5.59	1.79	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1105	0	0	0	737	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	15.9	0.0	0.0	0.0	34.7	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	15.9	0.0	0.0	0.0	34.7	0.0	0.0
Lane Grp Cap (c), veh/h	0	2556	0	0	0	1050	0	0
V/C Ratio (X)	0.00	0.43	0.00	0.00	0.00	0.70	0.00	0.00
Avail Cap (c_a), veh/h	0	2556	0	0	0	1050	0	0
Upstream Filter (I)	0.00	0.91	0.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	8.5	0.0	0.0	0.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.0	3.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	9.0	0.0	0.0	0.0	21.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	6.0	0.0	0.0	0.0	13.5	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	1.1	0.0	0.0

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3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.63	0.00	1.00	0.00	1.43	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	10.1	0.0	0.0	0.0	20.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.28	0.00	0.00	0.00	0.99	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	374	0	758	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1585	0	1814	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	26.2	0.0	35.3	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	26.2	0.0	35.3	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	1585.1	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	7.6	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.17	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	463	0	1072	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.81	0.00	0.71	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	463	0	1072	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	39.3	0.0	17.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	10.2	0.0	3.9	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	49.5	0.0	21.2	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	21.3	0.0	14.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	1.3	0.0	1.2	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.35	0.00	1.42	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	30.4	0.0	21.6	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	16.78	0.00	1.02	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	22.1
HCM 6th LOS	C

HCM 6th Signalized Intersection Summary
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Future (2029) Build Traffic Volumes
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	125	50	1200	1605	45
Future Volume (veh/h)	50	125	50	1200	1605	45
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	1781	1856	1826	1969	1870	1693
Adj Flow Rate, veh/h	53	132	53	1263	1689	47
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	8	3	5	2	2	14
Cap, veh/h	174	161	303	3030	2685	74
Arrive On Green	0.10	0.10	0.02	0.81	1.00	1.00
Sat Flow, veh/h	1697	1572	1739	3839	3625	98
Grp Volume(v), veh/h	53	132	53	1263	847	889
Grp Sat Flow(s),veh/h/ln	1697	1572	1739	1870	1777	1853
Q Serve(g_s), s	3.5	9.9	0.8	11.6	0.0	0.0
Cycle Q Clear(g_c), s	3.5	9.9	0.8	11.6	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.05
Lane Grp Cap(c), veh/h	174	161	303	3030	1351	1408
V/C Ratio(X)	0.30	0.82	0.18	0.42	0.63	0.63
Avail Cap(c_a), veh/h	361	334	433	3030	1351	1408
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	0.63	0.63
Uniform Delay (d), s/veh	49.9	52.8	2.6	3.3	0.0	0.0
Incr Delay (d2), s/veh	1.0	9.8	0.3	0.4	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	13.6	0.4	6.2	0.9	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	50.9	62.5	2.8	3.7	1.4	1.4
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	185			1316	1736	
Approach Delay, s/veh	59.2			3.7	1.4	
Approach LOS	E			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		103.2		16.8	6.0	97.2
Change Period (Y+Rc), s		6.0		4.5	3.5	6.0
Max Green Setting (Gmax), s		84.0		25.5	11.5	69.0
Max Q Clear Time (g_c+I1), s		13.6		11.9	2.8	2.0
Green Ext Time (p_c), s		47.0		0.5	0.1	60.5
Intersection Summary						
HCM 6th Ctrl Delay			5.6			
HCM 6th LOS			A			

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Future (2029) Build Traffic Volumes
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR				
Lane Configurations										
Traffic Volume (veh/h)	50	125	50	1200	1605	45				
Future Volume (veh/h)	50	125	50	1200	1605	45				
Number	7	14	5	2	6	16				
Initial Q, 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					
Lanes Open During Work Zone										
Adj Sat Flow, veh/h/ln	1781	1856	1826	1969	1870	1693				
Adj Flow Rate, veh/h	53	132	53	1263	1689	47				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				
Percent Heavy Veh, %	8	3	5	2	2	14				
Opposing Right Turn Influence	Yes		Yes							
Cap, veh/h	174	161	303	3030	2685	74				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				
Prop Arrive On Green	0.10	0.10	0.02	0.81	1.00	1.00				
Unsig. Movement Delay										
Ln Grp Delay, s/veh	50.9	62.5	2.8	3.7	1.4	1.4				
Ln Grp LOS	D	E	A	A	A	A				
Approach Vol, veh/h	185			1316	1736					
Approach Delay, s/veh	59.2			3.7	1.4					
Approach LOS	E			A	A					
Timer:		1	2	3	4	5	6	7	8	
Assigned Phs			2		4	5	6			
Case No			4.0		9.0	1.2	8.0			
Phs Duration (G+Y+Rc), s			103.2		16.8	6.0	97.2			
Change Period (Y+Rc), s			6.0		4.5	3.5	6.0			
Max Green (Gmax), s			84.0		25.5	11.5	69.0			
Max Allow Headway (MAH), s			9.2		4.0	3.8	9.2			
Max Q Clear (g_c+I1), s			13.6		11.9	2.8	2.0			
Green Ext Time (g_e), s			47.0		0.5	0.1	60.5			
Prob of Phs Call (p_c)			1.00		1.00	0.83	1.00			
Prob of Max Out (p_x)			0.48		0.00	0.00	0.87			
Left-Turn Movement Data										
Assigned Mvmt					7	5	1			
Mvmt Sat Flow, veh/h					1697	1739	0			
Through Movement Data										
Assigned Mvmt			2		4		6			
Mvmt Sat Flow, veh/h			3839		0		3625			
Right-Turn Movement Data										
Assigned Mvmt			12		14		16			
Mvmt Sat Flow, veh/h			0		1572		98			
Left Lane Group Data										
Assigned Mvmt	0	0	0	7	5	1	0	0		
Lane Assignment				LL (Pr/Pm)						

HCM 6th Signalized Intersection Capacity Analysis
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PM Peak Hour

Lanes in Grp	0	0	0	1	1	0	0	0
Grp Vol (v), veh/h	0	0	0	53	53	0	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1697	1739	0	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	3.5	0.8	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	3.5	0.8	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	0	0	1697	272	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	0.0	0.0	0.0	93.2	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	0.0	0.0	0.0	91.2	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	91.2	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	174	303	0	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.30	0.18	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	361	433	0	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	49.9	2.6	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.0	0.3	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	50.9	2.8	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	1.5	0.2	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	0.00	0.00	1.80	1.80	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	2.8	0.4	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.74	0.09	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	0
Lane Assignment		T				T		
Lanes in Grp	0	2	0	0	0	1	0	0
Grp Vol (v), veh/h	0	1263	0	0	0	847	0	0
Grp Sat Flow (s), veh/h/ln	0	1870	0	0	0	1777	0	0
Q Serve Time (g_s), s	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0
Lane Grp Cap (c), veh/h	0	3030	0	0	0	1351	0	0
V/C Ratio (X)	0.00	0.42	0.00	0.00	0.00	0.63	0.00	0.00
Avail Cap (c_a), veh/h	0	3030	0	0	0	1351	0	0
Upstream Filter (I)	0.00	1.00	0.00	0.00	0.00	0.63	0.00	0.00
Uniform Delay (d1), s/veh	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.0	1.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	3.7	0.0	0.0	0.0	1.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.0	0.0	0.5	0.0	0.0

HCM 6th Signalized Intersection Capacity Analysis
400: Washington Street & Osler Drive

Future (2029) Build Traffic Volumes
PM Peak Hour

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	0.00	1.00	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	6.2	0.0	0.0	0.0	0.9	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.20	0.00	0.00	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data

Assigned Mvmt	0	12	0	14	0	16	0	0
Lane Assignment				R		T+R		
Lanes in Grp	0	0	0	1	0	1	0	0
Grp Vol (v), veh/h	0	0	0	132	0	889	0	0
Grp Sat Flow (s), veh/h/ln	0	0	0	1572	0	1853	0	0
Q Serve Time (g_s), s	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	9.9	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.00	0.00	1.00	0.00	0.05	0.00	0.00
Lane Grp Cap (c), veh/h	0	0	0	161	0	1408	0	0
V/C Ratio (X)	0.00	0.00	0.00	0.82	0.00	0.63	0.00	0.00
Avail Cap (c_a), veh/h	0	0	0	334	0	1408	0	0
Upstream Filter (I)	0.00	0.00	0.00	1.00	0.00	0.63	0.00	0.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	52.8	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	9.8	0.0	1.4	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	62.5	0.0	1.4	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.4	0.0	0.5	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.55	0.00	1.80	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	13.6	0.0	1.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.14	0.00	0.03	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	5.6
HCM 6th LOS	A

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	380	15	55	270	50	155
Future Vol, veh/h	380	15	55	270	50	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	125	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	400	16	58	284	53	163

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	416	0	808 408
Stage 1	-	-	-	-	408 -
Stage 2	-	-	-	-	400 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1143	-	350 643
Stage 1	-	-	-	-	671 -
Stage 2	-	-	-	-	677 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1143	-	332 643
Mov Cap-2 Maneuver	-	-	-	-	332 -
Stage 1	-	-	-	-	671 -
Stage 2	-	-	-	-	642 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	332	643	-	-	1143	-
HCM Lane V/C Ratio	0.159	0.254	-	-	0.051	-
HCM Control Delay (s)	17.9	12.5	-	-	8.3	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	1	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑		↑
Traffic Vol, veh/h	525	10	0	325	0	45
Future Vol, veh/h	525	10	0	325	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	553	11	0	342	0	47

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	-	-	-	282
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.93
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	-	-	0	-	0	716
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	716
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)	716	-	-	-
HCM Lane V/C Ratio	0.066	-	-	-
HCM Control Delay (s)	10.4	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-



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