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Washington Township Transportation Planning Study

Washington Township, MI
July 2019

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Executive Summary

Continued growth in Washington Township has had many benefits; however, one of the negative impacts the Township has faced is increased traffic. The Macomb County Roads Department, which has jurisdiction over most of the roads in the Township, lacks funding to construct road improvements to keep pace with the quick development growth.

This Traffic Impact Study (TIS) was completed for currently planned and potential future developments in Washington Township, Macomb County, Michigan. The project area is generally bound by Jewell Road in the east, Van Dyke Avenue in the west, 29 Mile Road in the north, and 26 Mile Road in the south.

The study area for this project was selected by the Township because this is a concentrated area where the next wave of development is expected. One goal is that this study will allow Township leaders to work with County staff and developers to manage traffic and advance improvements that will be needed.

In the past, the Township often required a traffic impact study be prepared by a developer's traffic engineer. Those individual studies focused on the impacts of one particular development and generally did not evaluate the cumulative impacts of all the approved and planned changes to the surrounding land use. This study was prepared to look at those cumulative impacts and identify measures to address them in the future which could include road improvements, new signal technology, more aggressive management of access design and road connections between development, and reductions of densities to levels that the roadway system can support.

This study identifies that significant traffic congestion will transpire within several major intersections and along roadways if the anticipated development occurs without corresponding improvements to the roads to accommodate that future traffic. Based on that finding, there are number of ways this study can be used in the future:

1. As a base model for Washington Township, Shelby Township, County and developers to use to evaluate traffic implications on potential changes to land use planning, zoning, and roadway improvement alternatives.
2. The model can be expanded to include other areas of the Township, such as the Mound Road Corridor, or the northern part of the Township which is an area of future potential growth. Model expansions can incorporate the previously-identified development growth like that which is identified herein
3. The study shows the implications of planned land uses and zoning in terms of traffic impacts. This allows for the evaluation of alternative land uses in the Township's Master Plan, such as reductions in densities that would reduce the projected roadway capacity deficiencies.

4. Coordinate with the County and adjacent communities to identify future needs, such as right-of-way, planning and funding options for major improvements (such as a future median along 26 Mile Road east of M-53).
5. As a basis to negotiate with developers who propose a Planned Unit Development (PUD). Many other townships have worked with developers to ensure they contribute to roadway improvements to help mitigate their traffic impacts as part of the "Public Benefit" ordinance requirement for a PUD. This is particularly useful when a developer is requesting additional densities or more intense land uses that will generate more traffic than associated with the base zoning.

The purpose of this study was to analyze traffic operations with and without the proposed and potential developments, in order to evaluate area intersection and corridor operations and identify any potential off-site impacts / required mitigation for both the *Near-Term Development Scenario* (known developments) and the *Long-Term Development Scenario* (development of remaining vacant developable lands).

The near-term planned future developments include thirty (30) developments totaling 2,516 new residential units, 113,124 square feet of new commercial development, and a new high school with 1,300 students. The long-term projected future development includes developable area that can support approximately 1,004 new residential units, 58,458 square feet of new commercial development, and 239,755 square feet of new industrial development. This study did not cover the new high school end-of-day release time – which typically falls within the 2:00 p.m. to 4:00 p.m. time frame – but instead focused on the typical road peaks from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. Once the New Romeo High School is operational, adjacent intersections of highest potential traffic impact (specifically, Jewell Road & 29 Mile Road) should be monitored to assess the need for additional traffic control measures that would improve the facilitation of afternoon peak school traffic (e.g. police presence, intersection signalization, etc.)

This report is intended for use by Washington Township and Macomb County to guide decisions related to the identification of future roadway improvement needs. The methodologies, analyses, results, and recommendations relevant to this study are described in detail herein.

Overall, the conclusions of this Traffic Impact Study are as follows:

1. Existing conditions analyses indicated that several network deficiencies cause many approaches and/or movements to operate at a LOS E or F at three of the ten study intersections during both peak periods. Minor improvements can be implemented in the existing condition to mitigate multiple failing approaches and/or movements.
2. Additional traffic volumes in the *Near-Term Development Scenario* considering near-term developments and ambient traffic growth in the area will result in degraded operations at six of the ten study intersections, requiring additional improvements

including the installation/modernization of multiple traffic control signals and the widening of 26 Mile Road through Jewell Road.

3. Additional traffic volumes in the *Long-Term Development Scenario* considering the long-term build-out of the developable vacant lands and redevelopment of existing properties will result in further degraded operations at eight of the ten study intersections, requiring additional improvements including the installation/modernization of multiple traffic control signals and significant capacity improvements at 26 Mile Road & Jewell Road.

Based on the results of this study, the following should be considered to provide acceptable traffic operations due to ***existing network deficiencies:***

1. Make signal timing adjustments at Van Dyke Avenue & West Road;
2. Make signal timing adjustments at 27 Mile Road & Van Dyke Avenue; and
3. Make signal timing adjustments at 29 Mile Road & Van Dyke Avenue.

Based on the results of this study, the following should be required to provide acceptable traffic operations ***with the build-out of the Near-Term Development Scenario:***

1. Widen 26 Mile Road to four lanes from west of Jewell Road to east of Schoenherr Road, modernize the traffic control signal at 26 Mile Road & Jewell Road (fully-actuated box span), and implement southbound right turn overlap phasing;
2. Make signal timing adjustments at Van Dyke Avenue & West Road;
3. Construct a northbound right turn lane and implement signal timing adjustments at 27 Mile Road & Van Dyke Avenue;
4. Make signal timing adjustments at 28 Mile Road & Van Dyke Avenue;
5. Install a traffic control signal with two-lane approaches at each leg at 28 Mile Road & Jewell Road; and
6. Make signal timing adjustments at 29 Mile Road & Van Dyke Avenue.

Based on the results of this study, the following should be required to provide acceptable traffic operations ***with the build-out of the Long-Term Development Scenario:***

1. Significant capacity improvements are required at 26 Mile Road & Jewell Road. This may include dual eastbound left turn lanes (requiring widening of Jewell Road) and dual southbound left turn lanes (among other improvements), or converting 26 Mile Road east of M-53 to a boulevard section;
2. Make signal timing adjustments at Van Dyke Avenue & West Road;
3. Make signal timing adjustments at 27 Mile Road & Van Dyke Avenue;

4. Modernize the traffic control signal at 27 Mile Road & Jewell Road, construct two-lane approaches on the westbound and southbound legs, and construct three-lane approaches on the eastbound and northbound legs
5. Make signal timing adjustments at 28 Mile Road & Van Dyke Avenue;
6. Construct a westbound right turn lane and make signal timing adjustments at 29 Mile Road & Van Dyke Avenue;
7. Install a traffic control signal at 29 Mile Road & Jewell Road with two-lane approaches at each leg; and
8. Widen Jewell Road between 26 Mile Road and 27 Mile Road.

Project Overview

This report presents the methodologies, analyses, and results of the Transportation Infrastructure Study (TIS) for the currently planned and potential future development in Washington Township, and approved or anticipated developments in Section 1 and 2 of Shelby Township to the south. The impacts of those were evaluated in a similar study for Shelby Township. The project area is generally bound by Jewell Road in the east, Van Dyke Avenue in the west, 29 Mile Road in the north, and 26 Mile Road in the south, as shown on **Figure 1**. The existing occupied land uses comprise a mix of residential, commercial, institutional, and industrial uses. It is anticipated that many of the currently vacant parcels will be developed into residential, commercial, and industrial uses in the future.

Currently, multiple developments are anticipated throughout Washington Township in the near-term, requiring a fair funding process for any and all potential future road network improvements that arise from traffic generated by these new near-term developments, in addition to the long-term development of the remaining vacant lands and redevelopment of existing land uses. This study was focused on the Van Dyke Avenue and Jewell Road corridors adjacent to the west and east of M-53, respectively. The Macomb County Department of Roads (MCDR) has jurisdiction over Van Dyke Avenue, Jewell Road, 26 Mile Road, 27 Mile Road, 28 Mile Road, 29 Mile Road, West Road, and Campground Road.

This study analyzed traffic operations with and without the proposed and potential developments, in order to evaluate area intersection and corridor operations and identify any potential off-site impacts / required mitigation for both the *Near-Term Development Scenario* (known developments) and the *Long-Term Development Scenario* (development of remaining vacant developable lands). Furthermore, a proportional impact model was developed relative to each development based on the existing traffic volumes, trip generation forecasts, and directional traffic assignments. Ultimately, a fair funding process can be developed based on the proportional impact model and included in future PUD agreements with private developers applying to build out the vacant lands in Washington Township.

The scope of this study was developed based on the consultants' knowledge of the study area, understanding of the future development, and information published by the Institute of Transportation Engineers (ITE). Additionally, input was solicited related to the proposed scope of work from Macomb County. This study was completed in accordance with accepted traffic engineering practice and includes analysis of the weekday AM and PM peak hours both without and with the proposed future development. Baseline traffic conditions were established based on vehicle turning movement counts collected in February 2019.

This study was completed in accordance with the methodologies and practices published by the Institute of Transportation Engineers (ITE) and the applicable Township and County standards.

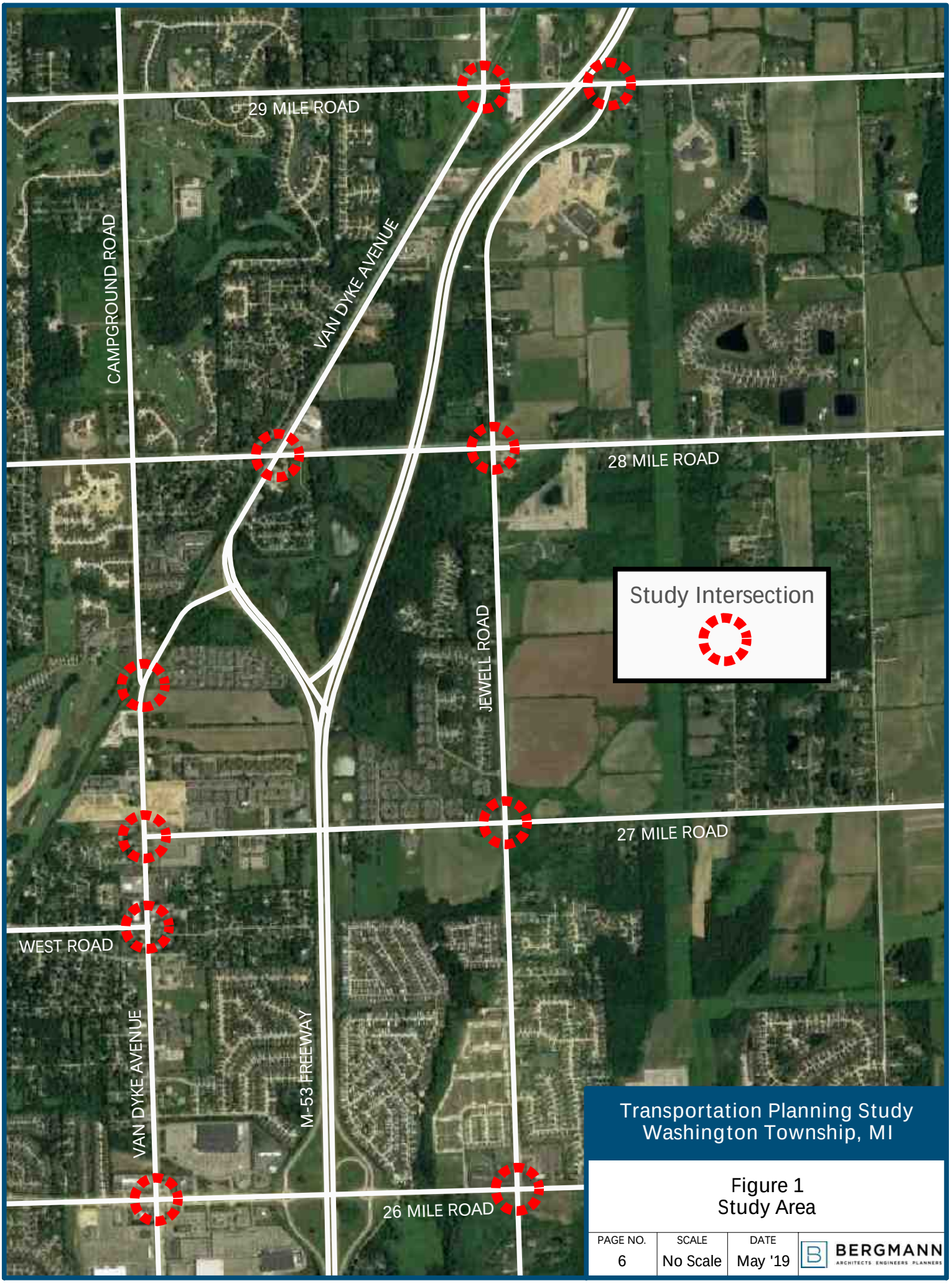

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Figure 1
Study Area

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Background Data

Existing Road Network

Vehicle transportation for the future developments will be provided primarily via the eight aforementioned study roadways – Van Dyke Avenue, Jewell Road, 26 Mile Road, West Road, 27 Mile Road, Campground Road, 28 Mile Road, and 29 Mile Road. Regional access is provided via M-53 which has an interchange with 26 Mile Road approximately ½ mile west of Jewell Road and ½ mile east of Van Dyke Avenue. M-53 also has a partial interchange at Van Dyke Avenue approximately ½ mile south of 28 Mile Road which provides access from the north and to/from the south. The study intersections are identified and further details on the study network are provided in **Table 1**, which comprises a roadway inventory with roadway characteristics.

Study Intersections

1. 26 Mile Road & Van Dyke Avenue (signalized);
2. 26 Mile Road & Jewell Road (signalized);
3. Van Dyke Avenue & West Road (signalized);
4. 27 Mile Road & Van Dyke Avenue (signalized);
5. 27 Mile Road & Jewell Road (STOP);
6. Van Dyke Avenue & Campground Road (STOP);
7. 28 Mile Road & Van Dyke Avenue (signalized);
8. 28 Mile Road & Jewell Road (signalized);
9. 29 Mile Road & Van Dyke Avenue (signalized); and
10. 29 Mile Road & Jewell Road (STOP).

Table 1. Roadway Inventory/Characteristics

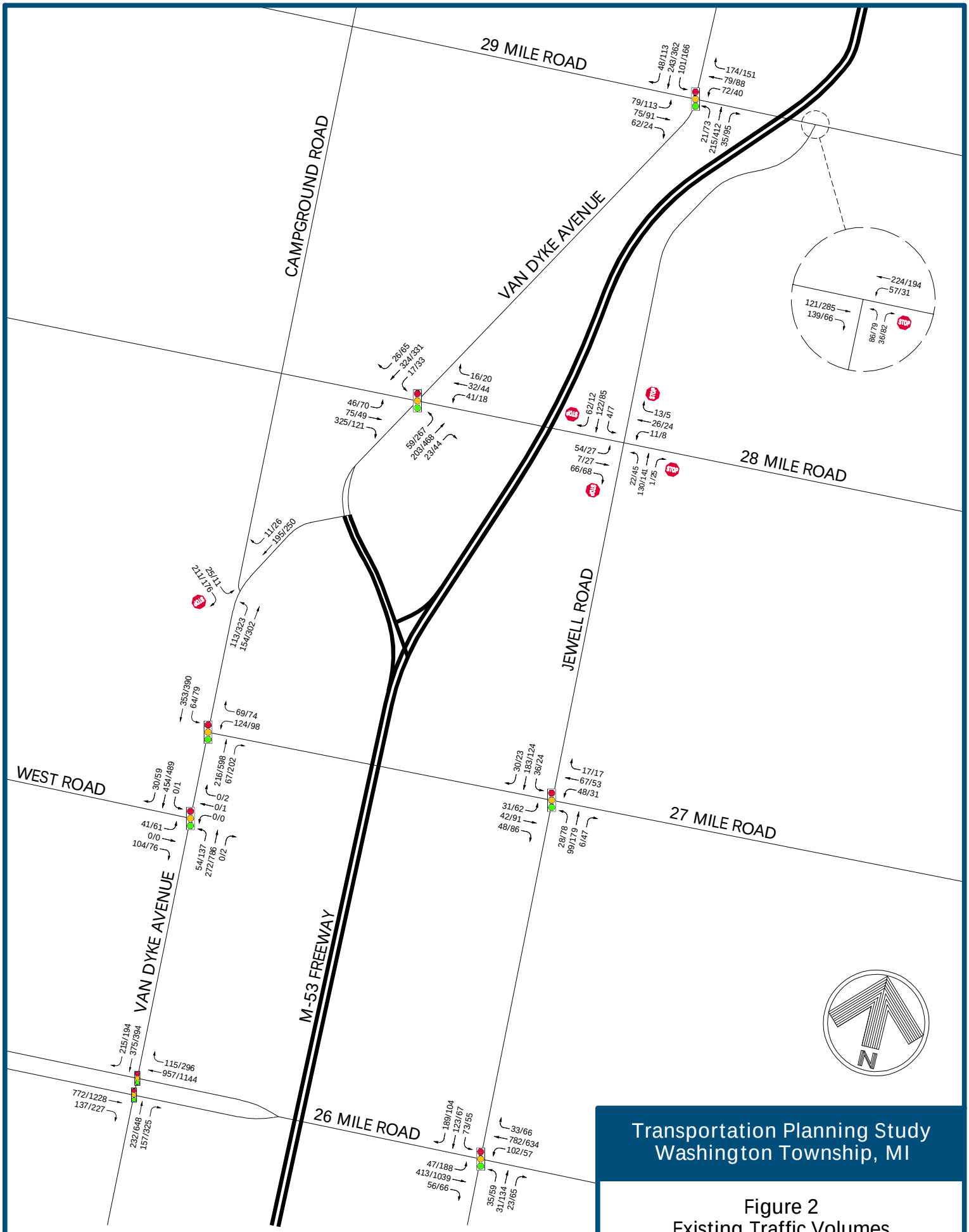
Roadway Data	Van Dyke Ave	Jewell Rd	26 Mile Rd	West Rd
Functional Class	Minor Arterial	Major Collector	Other Principal Arterial	Local Road
Direction	N-S	N-S	E-W	E-W
Speed Limit (mph)	40-45	45	45	30
Jurisdiction	MCDR	MCDR	MCDR	MCDR
Cross Section	3 Lanes (S of Campground) 2 Lanes (N of Campground)	2 Lanes	Boulevard (3 Lanes per Direction)	2 Lanes
AADT	16,110 (2018; S of 28 Mile)	6,330 (2019; N of 26 Mile) 1,500 (2018; N of 28 Mile)	57,450 (2015; above M-53)	3,640 (2016)
2019 AM Peak Hour Volume (vph)	975 (S of 28 Mile)	496 (N of 26 Mile) 385 (N of 28 Mile)	2,001 (E of Van Dyke) 1,622 (W of Jewell)	229
2019 PM Peak Hour Volume (vph)	1249 (S of 28 Mile)	614 (N of 26 Mile) 277 (N of 28 Mile)	2,993 (E of Van Dyke) 2,090 (W of Jewell)	334

Roadway Data	27 Mile Rd	Campground Rd	28 Mile Rd	29 Mile Rd
Functional Class	Major Collector	Minor Arterial	Major Collector	Major Collector
Direction	E-W	N-S	E-W	E-W
Speed Limit (mph)	45	45	45	45
Jurisdiction	MCDR	MCDR	MCDR	MCDR
Cross Section	2 Lanes	2 Lanes	2 Lanes	2 Lanes
AADT	2,260 (2016)	5,620 (2018)	1,520 (2019)	3,260 (2013)
2019 AM Peak Hour Volume (vph)	324	360	204	536
2019 PM Peak Hour Volume (vph)	453	536	208	631

Existing Traffic Counts

Existing weekday AM (7:00 a.m. to 9:00 a.m.) and PM (4:00 p.m. to 6:00 p.m.) turning movement counts were collected at the study intersections on Tuesday, February 5, 2019. Counts were collected by Bergmann subconsultant Traffic Data Collection, LLC (TDC) during typical traffic conditions when schools were in session. Data were collected in 15-minute intervals to establish the current peak hour traffic volumes and peak hour factors (PHF). Major weather events, holidays, and other local special events were avoided.

The weekday AM and PM peak hours of existing road traffic was identified at each of the individual study intersections. Specific traffic generators were identified as sink / source locations between each intersection, and thru traffic volumes were balanced upward across the network. In general, the individual intersection volumes required only minor upward balancing of through volumes, validating the counts at each intersection. The traffic volume data are included in **Appendix A** and the existing peak hour traffic volumes are summarized on **Figure 2**.



###/### AM/PM PEAK HOUR VOLUME

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Figure 2
Existing Traffic Volumes

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Land Use Analysis

Existing, proposed, and anticipated land use conditions were factored into the traffic model to more accurately understand future road and circulation improvements needed to accommodate and manage traffic within and around the study area in Washington Township. Existing conditions reviewed what types of traffic improvements are needed today, the near-term scenario reviewed proposed developments and their traffic implications, and finally a longer term-scenario was evaluated to determine what types of traffic improvements are needed if developable land is built out within and near the core study area.

Residential Development

In total, there were 18 proposed residential developments, 17 in Washington Township and 1 located along the southeastern boarder in Ray Township, that were evaluated as part of this study to determine their cumulative impacts on traffic circulation. While scattered throughout the Township, the majority of the proposed residential developments are within or directly adjacent to the core of the study area (Jewell Road to Vandyke Avenue between 26 Mile and 29 Mile roads).

Discussions and review of site plans supplied by Washington Township revealed that there are an estimated 2,516 residential units within the 902-acre area of the 18 proposed developments. Additional analysis was completed to determine the buildable net acreage which removes the wetland (actual and potential) acreage, open space and road/internal right-of-way acreage (30% was assumed as the total percentage of the sites). The total buildable net acreage of the proposed planned developments is estimated to be 559 acres with an approximate average density of 6 units per acre. The density varies significantly among the residential developments as there is a combination of single-family, multi-family, and condo residential projects that are proposed.

In addition to proposed residential developments, vacant residential land area of approximately 828 acres within and adjacent to the core study area was evaluated as a future build out scenario. The majority of this vacant residential land lies along 27 Mile Road to the east of the core study area. Existing zoning guided the density assumptions and ranges for the vacant land which included low density single-family residential, moderate density single-family residential, and multi-family residential. A property along Mound Road, owned by Romeo Schools, was also included in the future build out scenario as it was recently up for sale and it was advertised as a potential residential development of 54 units.

Similar to the proposed residential developments, actual and potential wetlands, road/right-of-way, and open space acreage were factored into the land use scenarios to determine total net developable acreage. For the single-family zoning district of low and medium densities, it was assumed that 35% of the total gross acreage (minus the wetlands) would be used for roads and open space. For multi-family residential, the net acreage assumption was factored in by just averaging the lower and higher scaled allowable densities (to be 6.5 units per acre) which would account for any roads and open space. Low and medium density single-family

residential both included density ranges (units/acre). In total, 493 acres are estimated to be developable amongst the vacant residential land area. If lower density is assumed at build out, then approximately 706 residential units could be built. However, if higher density is assumed, then approximately 1,004 residential units could be built. For the purposes of this study, the higher density is used in the full build out scenario as part of the traffic model.

In total, there is an estimated gross acreage of 1,725 acres (1,052 net acres) amongst the proposed residential developments and the developable vacant residential land in the study area. Assuming maximum density, there is an approximate total of 3,520 residential units that affect the traffic implications of the core study area.

Commercial and Industrial Development

Like the proposed and potential residential development, commercial and industrial land area was also analyzed to help determine potential traffic improvements needed. Several commercial and retail developments are proposed along Van Dyke that will ultimately bring in additional traffic to the area. These commercial developments include over 19 gross acres and approximately 113,124 square feet of office, retail, and restaurant space. Additionally, there were three commercial properties (four acres total) identified, also along Van Dyke, that could be developed in the future. Front, side, and rear setbacks from the Washington Township Zoning Ordinance were used to determine the maximum building and parking envelope permitted on each of the sites. The approximate maximum building square footage of 58,458 square feet for all three sites was then calculated by assuming each building was 2 stories tall (based on feedback from the Township per the Master Plan) and also factored in parking requirements (1 parking space per 250 square feet is required for office and retail uses). The Institute of Transportation Engineers Trip Generation Manual was used to determine total number of trips generated by each use.

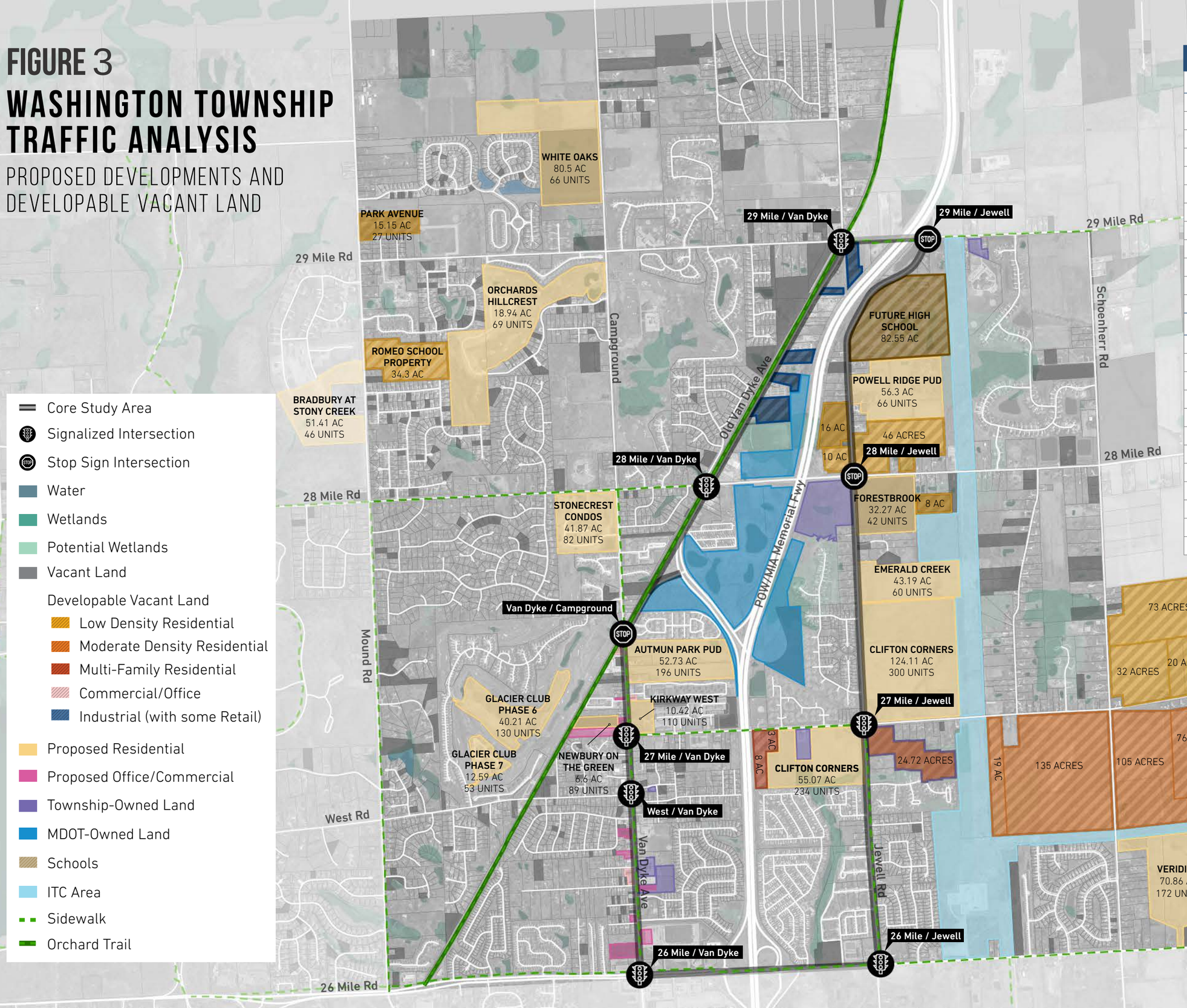
In the northern portion of the study area, there is a cluster of vacant developable industrial land that totals approximately 28 acres. The Washington Township Zoning Ordinances restricts industrial properties to a Floor Area Ratio (FAR) of 1:5, subsequently permitting a maximum building square footage total of an estimated 239,755 square feet amongst these five properties. Again, the Institute of Transportation Engineers Trip Generation Manual was used to determine total number of trips generated by each use.

All proposed developments and developable vacant land considered for this study is shown on **Figure 3**.

FIGURE 3

WASHINGTON TOWNSHIP TRAFFIC ANALYSIS

PROPOSED DEVELOPMENTS AND DEVELOPABLE VACANT LAND



SUMMARY OF ASSUMPTIONS

RESIDENTIAL

Proposed Residential Developments	
Total Gross Area	692 acres
Total Net Area	524 acres
Total # of Units	2,456 units
Total Developable Residential Vacant Land	
Total Gross Area	828 acres
Total Net Area	493 acres
Total # of Units	1,004 units
Total Residential (assuming max density)	
Total Gross Area	1,677 acres
Total Net Area	1,017 acres
Total # of Units	3,460 units

COMMERCIAL/OFFICE/INDUSTRIAL

Proposed Commercial/Office Developments	
Total Gross and Net Area	19 acres
Total Square Footage	113,124 sq ft
Total Developable Commercial/Office Vacant Land	
Total Gross and Net Area	4 acres
Total Square Footage	58,458 sq ft
Total Developable Industrial Vacant Land	
Total Gross and Net Area	28 acres
Total Square Footage	239,755 sq ft
Total Commercial/Office/Industrial	
Total Gross and Net Area	51 acres
Total Square Footage	411,337 sq ft

Existing Conditions Analysis

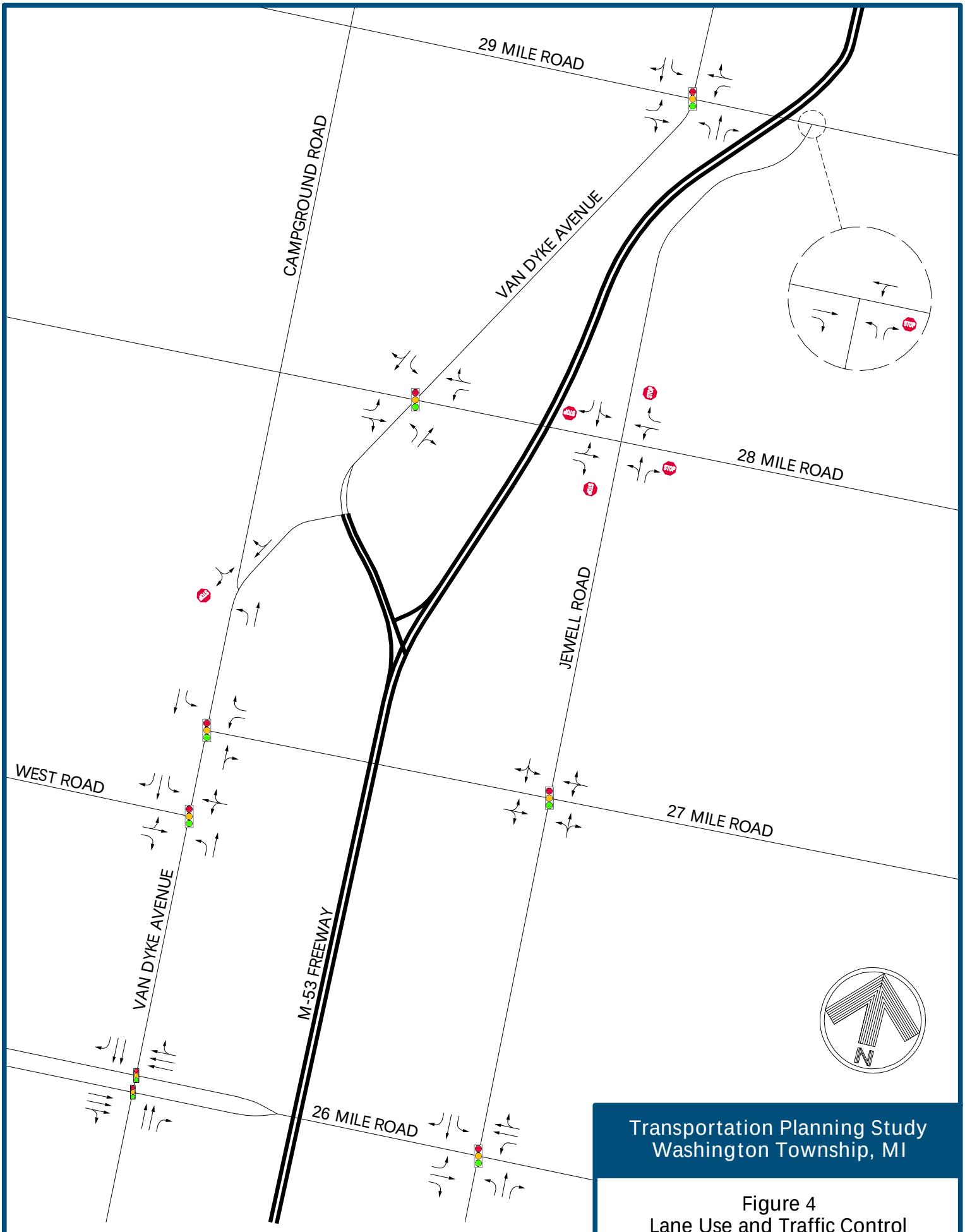
Existing 2019 Traffic Conditions

Existing peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro (Version 10) traffic analysis software. The results of the analysis of existing conditions were based on the existing lane configurations (shown in **Figure 4**) and traffic control, the existing traffic volumes shown on Figure 2, and the methodologies presented in the *Highway Capacity Manual, 6th Edition (HCM6)*.

Typically, LOS D is considered acceptable, with LOS A representing minimal delay, LOS F indicating failing conditions, and LOS E representing conditions where demands are approaching capacity. Simulations of the study network were also observed using SimTraffic, in order to identify potential issues related to vehicle queuing, traffic flow between intersections, and the overall study network. The results of the analysis of existing conditions are presented in **Appendix B** summarized in **Table 2** , shown graphically in **Figure 5**, and described in further detail below.

The results of the existing conditions analysis indicate that several study intersections currently operate with approaches and/or movements that have high vehicular delays (LOS E or F) during both peak hours. These are displayed in Table 2, with movements operating at a LOS E highlighted in orange and movements operating at a LOS F highlighted in red. To summarize, the following intersections contain approaches or individual movements that operate at a LOS E or F:

- Van Dyke Avenue & West Road (both AM and PM peak hours);
- 27 Mile Road & Van Dyke Avenue (both AM and PM peak hours); and
- 29 Mile Road & Van Dyke Avenue (both AM and PM peak hours).



###/### AM/PM PEAK HOUR VOLUME

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Figure 4
Lane Use and Traffic Control

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Table 2. Existing 2019 Traffic Conditions

Intersection	Approach	AM Peak Hour				PM Peak Hour			
1. 29 Mile Rd. & Van Dyke Ave.	EB	67.3 E	80.6 F	59.5 E		90.4 F	121.4 F	60.8 E	
Signalized	WB	58.9 E	50.0 D	61.5 E		60.7 E	45.9 D	63.2 E	
	NB	63.8 E	26.3 C	71.1 E	41.6 D	53.1 D	34.4 C	60.7 E	34.4 C
	SB	56.2 E	23.1 C	67.7 E		52.5 D	31.3 C	59.9 E	
	Overall		**60.8**	**LOS**	**E**	**Overall**	**59.5**	**LOS**	**E**
2. 29 Mile Rd. & Jewell Rd.	EB	0.0 A		Free		0.0 A		Free	
Minor STOP	WB	1.6 A	8.1 A	Free		1.1 A	8.2 A	Free	
	NB	14.0 B	16.0 C		9.3 A	13.4 B	16.0 C		10.9 B
	Overall		**4.0**	**LOS**	**A**	**Overall**	**3.6**	**LOS**	**A**
3. 28 Mile Rd. & Van Dyke Ave.	EB	45.0 D	22.2 C	47.6 D		35.5 D	33.2 C	36.5 D	
Signalized	WB	29.8 C	40.5 D	20.7 C		31.4 C	37.6 D	29.7 C	
	NB	11.2 B	14.5 B	10.3 B		9.0 A	12.8 B	7.0 A	
	SB	11.5 B	11.5 B	11.5 B		6.6 A	9.0 A	6.4 A	
	Overall		**25.4**	**LOS**	**C**	**Overall**	**14.1**	**LOS**	**B**
4. 28 Mile Rd. & Jewell Rd.	EB	9.4 A	11.0 B	7.5 A		8.6 A	10.7 B	7.3 A	
All-Way STOP	WB	9.3 A	10.1 B	8.7 A		8.8 A	9.2 A	8.2 A	
	NB	11.0 B	9.6 A	8.3 A		10.3 B	9.0 A	7.8 A	
	SB	9.8 A	10.6 B	8.2 A		9.0 A	9.2 A	7.4 A	
	Overall		**9.9**	**LOS**	**A**	**Overall**	**9.5**	**LOS**	**A**
5. Van Dyke Ave. & Campground Rd.	EB	13.0 B	19.8 B			8.4 A	8.4 A		
Minor STOP	NB	3.5 A	22.9 C	Free		4.6 A	9.0 A	Free	
	SB	0.0 A		Free		0.0 A		Free	
	Overall		**5.5**	**LOS**	**A**	**Overall**	**5.5**	**LOS**	**A**
6. 27 Mile Rd. & Van Dyke Ave.	WB	58.9 E	62.1 E		53.1 D	60.8 E	62.3 E		58.7 E
Signalized	NB	58.7 E		58.7 E		56.2 E		56.2 F	
	SB	5.2 A	13.4 B	3.7 A		7.0 A	27.3 C	2.8 A	
	Overall		**33.2**	**LOS**	**C**	**Overall**	**40.9**	**LOS**	**D**

Intersection	Approach	AM Peak Hour				PM Peak Hour			
7. 27 Mile Rd. & Jewell Rd.	EB	9.7 A	9.7 A			10.2 B	10.2 B		
Signalized	WB	9.8 A	9.8 A			8.7 A	8.7 A		
	NB	6.2 A	6.2 A			8.1 A	8.1 A		
	SB	7.0 A	7.0 A			7.4 A	7.4 A		
	Overall		**7.8**	**LOS**	**A**	**Overall**	**8.6**	**LOS**	**A**
8. Van Dyke Rd. & West Rd.	EB	58.0 E	49.3 D		61.4 E	60.4 E	56.4 E		63.6 E
Signalized	WB	0.0 A	0.0 A			51.9 D	51.9 D		
	NB	4.2 A	3.6 A	4.3 A		4.7 A	2.9 A	5.0 A	
	SB	0.7 A	0.0 A	0.8 A	0.0 A	0.5 A	1.8 A	0.6 A	0.1 A
	Overall		**11.6**	**LOS**	**B**	**Overall**	**8.3**	**LOS**	**A**
9. EB 26 Mile Rd. & Van Dyke Rd.	WB	54.3 D		14.5 B		35.7 D		35.7 D	
Signalized	NB	0.1 A		0.1 A		1.5 A		1.5 A	
	SB	11.3 B		11.3 B	11.3 B	14.8 B		14.8 B	14.7 B
	Overall		**33.4**	**LOS**	**C**	**Overall**	**22.5**	**LOS**	**C**
10. WB 26 Mile Rd. & Van Dyke Rd.	EB	36.0 D		36.0 D		33.2 C		33.2 C	
Signalized	NB	12.3 B		12.2 B	12.5 B	21.6 C		21.1 C	22.5 C
	SB	3.0 A		3.0 A		0.3 A		0.3 A	
	Overall		**21.1**	**LOS**	**C**	**Overall**	**24.6**	**LOS**	**C**
11. 26 Mile Rd. & Jewell Rd.	EB	31.3 C	43.0 D	31.0 C	23.4 C	23.6 C	16.9 B	25.9 C	7.8 A
Signalized	WB	32.2 C	47.6 D	30.3 C	30.3 C	12.6 B	50.5 D	9.5 A	9.5 A
	NB	17.5 B	19.5 B	16.2 B	16.2 B	40.6 D	42.4 D	40.7 D	38.6 D
	SB	18.4 B	17.9 B	17.5 B	19.3 B	41.2 D	46.1 D	38.1 D	40.7 D
	Overall		**28.3**	**LOS**	**C**	**Overall**	**23.6**	**LOS**	**C**

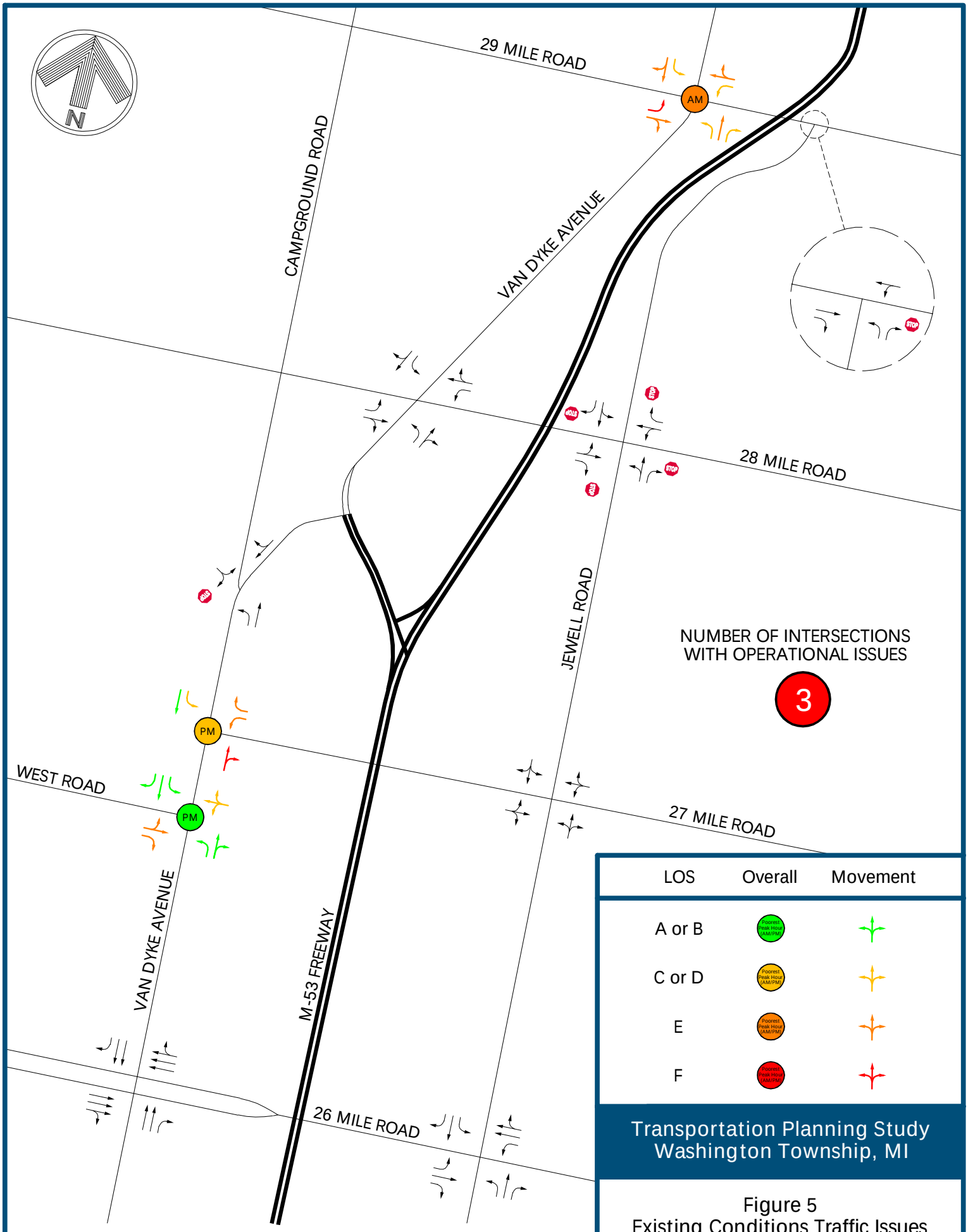

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Figure 5
Existing Conditions Traffic Issues

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Existing 2019 Traffic Conditions with Improvements

In order to improve traffic operations at all approaches and movements to "acceptable" in the existing condition, mitigation measures were identified at locations were vehicular traffic operations were poor (LOS E or F). A summary of all recommended mitigation measures is shown in **Table 3**. In addition, these recommended mitigation measures are shown graphically in **Figure 6**.

- Van Dyke Avenue & West Road: *Signal timing adjustments*;
- 27 Mile Road & Van Dyke Avenue: *Signal timing adjustments*; and
- 29 Mile Road & Van Dyke Avenue: *Signal timing adjustments*.

It should be noted that signal timing adjustments are made automatically by software deployed in the Macomb County *Communications and Technology* (COMTEC) Center. These adjustments are made by extending or reducing green time of specific traffic signal phases according to vehicular demand as detected by sensors at specific intersections in the field. The intersections along Van Dyke Avenue are part of this software-driven automatic optimization network. Therefore, the failing movements identified in the Existing Conditions analysis (and subsequent analyses) that can be improved with only *signal timing adjustments* are likely already operating as desired by the County. It is likely that the County has chosen to prioritize vehicular traffic progression along Van Dyke Avenue to the detriment of side-street vehicular traffic, which incur additional delays so that the heavier north-south traffic movements along Van Dyke can experience reduced delays and queuing along the corridor.

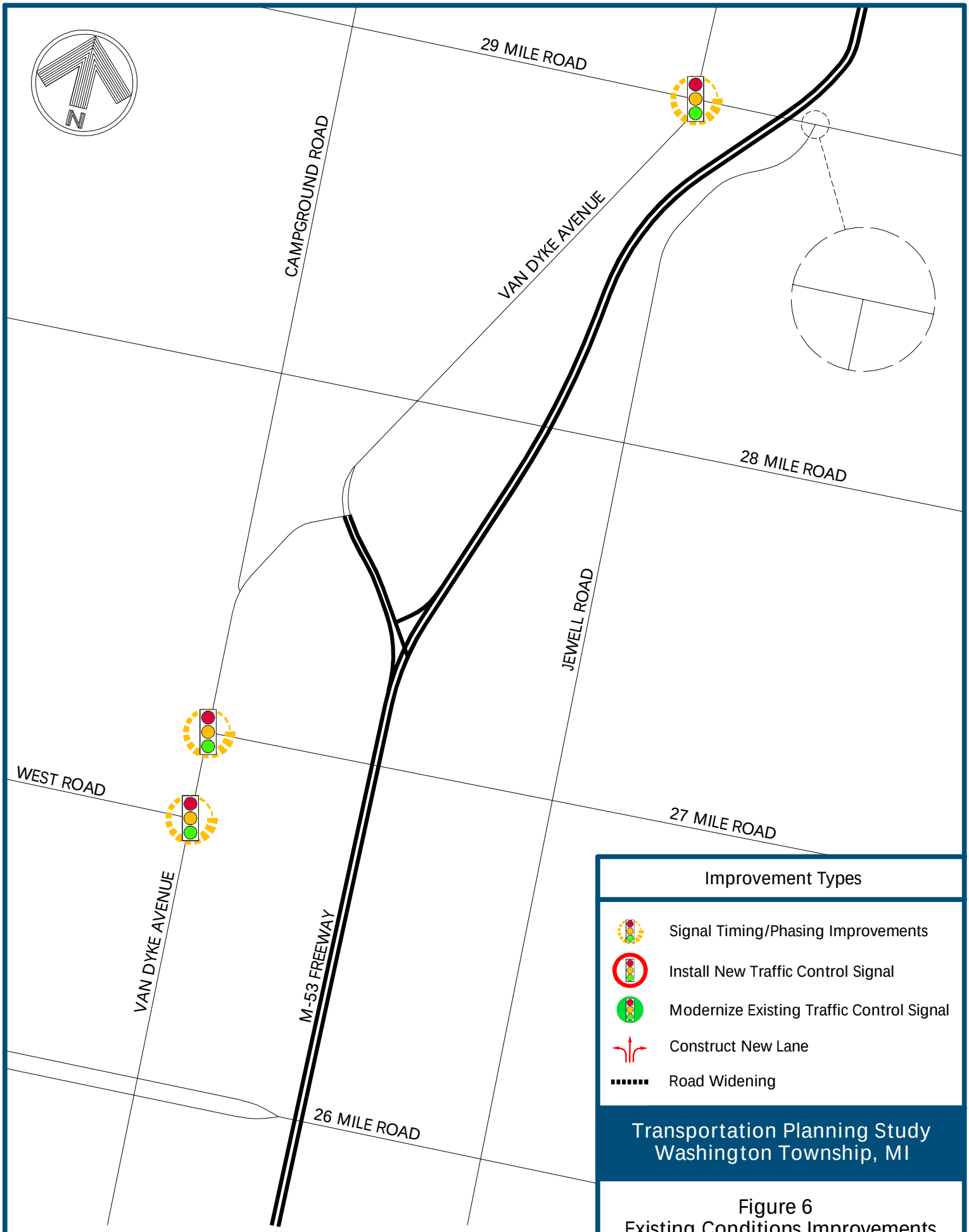
The results of this existing conditions with improvements analysis indicate that with the implementation of all recommended mitigation measures, all approaches and movements at the intersections will operate acceptably as shown in **Table 4**. SimTraffic simulations also indicate acceptable traffic operations with the recommended mitigation measures and significant vehicle queues were not observed.

Table 3. Existing 2019 Traffic Conditions – Recommended Improvements

Intersection	Approach	
1. 29 Mile Rd. & Van Dyke Ave. Signalized 	EB	---
	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
6. 27 Mile Rd. & Van Dyke Ave. Signalized 	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
8. Van Dyke Rd. & West Rd. Signalized 	EB	---
	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**

New Improvements

Previously-Recommended Improvements



###/### AM/PM PEAK HOUR VOLUME

Improvement Types

- Signal Timing/Phasing Improvements
- Install New Traffic Control Signal
- Modernize Existing Traffic Control Signal
- Construct New Lane
- Road Widening

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Figure 6
Existing Conditions Improvements

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Table 4. Existing 2019 Traffic Conditions with Improvements

Intersection	Approach	AM Peak Hour				Approach	PM Peak Hour			
1. 29 Mile Rd. & Van Dyke Ave.	EB	42.5 D	48.7 D		38.9 D	EB	48.6 D	52.4 D		44.9 D
Signalized	WB	36.3 D	33.7 C		37.1 D	WB	48.3 D	34.3 C		50.6 D
	NB	46.6 D	23.9 C	51.9 D	27.7 C	NB	45.4 D	31.3 C	52.3 D	26.4 C
	SB	43.5 D	21.5 C		51.1 D	SB	46.1 D	28.9 C		52.1 D
	Overall		**42.4**	**LOS**	**D**	**Overall**		**46.6**	**LOS**	**D**
6. 27 Mile Rd. & Van Dyke Ave.	WB	38.0 D	39.7 D		34.9 C	WB	45.4 D	46.4 D		44.0 D
Signalized	NB	42.6 D			42.6 D	NB	23.7 C			23.7 C
	SB	5.4 A	12.5 B	4.1 A		SB	7.0 A	26.6 C	3.1 A	
	Overall		**23.9**	**LOS**	**C**	**Overall**		**21.1**	**LOS**	**C**
8. Van Dyke Rd. & West Rd.	EB	37.9 D	32.2 C		40.1 D	EB	44.7 D	41.6 D		47.1 D
Signalized	WB	0.0 A	0.0 A			WB	38.4 D	38.4 D		
	NB	4.6 A	3.9 A		4.8 A	NB	5.4 A	3.2 A		5.8 A
	SB	0.9 A	0.0 A	1.0 A	0.1 A	SB	0.6 A	2.2 A	0.6 A	0.1 A
	Overall		**8.5**	**LOS**	**A**	**Overall**		**7.3**	**LOS**	**A**

Near-Term Development Scenario Analysis

Near-Term Development Traffic Volumes

Near-term development traffic conditions reflect future operations with currently-planned developments which are proposed to be built and occupied within a short time frame. These near-term developments comprise the following elements:

- 18 residential developments;
- 1 new high school development; and
- 11 commercial developments.

Future traffic volume projections, like those used in the *Near-Term Development Scenario* analysis, typically include ambient traffic growth appropriate for the study area as well as traffic volumes related to any other new developments that would be operational prior to the subject project. A review of corridor growth rates on study roadways revealed volatile traffic growth for the previous ten years (with increases and decreases noted on the study roadways, depending on the year). Although the Southeast Michigan Council of Governments (SEMCOG) projects an increase in Washington Township population to their forecast horizon year of 2045, a large portion of that growth is represented by the full development of the vacant areas nearest to the M-53 freeway corridor through the southern half of the township, which are the focus of this study.

After an investigation of historical traffic growth, projected population growth, and study-specific considerations, no growth was assigned to the study road network for the following reasons:

- A review of historical traffic volume growth did not reveal consistent growth;
- The typical development projects within Washington Township that would lead to most of the population (and vehicular traffic) growth on the study road network are the subject of this study; and
- The intent of the study is to assess incremental impacts and assign mitigation measures for near-and-long-term development conditions when compared against a baseline (2019 traffic volumes).

The number of vehicle trips that would be generated by the near-term proposed developments was forecast based on the methodology and data published by ITE in *Trip Generation, 10th Edition* and the *Trip Generation Handbook, 3rd Edition*. An analysis conducted by MKSK (as shown in **Appendix C**) revealed that the near-term development in Washington Township includes approximately 2,516 new residential units, 113,124 SF of new commercial development, and a new high school with 1,300 students. The ITE land uses #210 (Single-Family Detached Housing), #220 (Multifamily Housing [Low-Rise]), #530 (High School), #710 (General Office Building), #820 (Shopping Center), #930 (Fast Casual Restaurant), #931 (Quality Restaurant), #932 (High-Turnover [Sit-Down] Restaurant), and #934 (Fast-Food

Restaurant with Drive-Thru) were used for this analysis. It is noted that for land use #530 (High School) the trip generation exercise covered the adjacent road commuter AM and PM peak hours (typically occurring between 7:00 a.m. – 9:00 a.m. and 4:00 p.m. – 6:00 p.m., which were the hours during which traffic data was collected for this study). As is common with high schools, the end-of-day release time typically falls within the 2:00 p.m. to 4:00 p.m. time frame. Therefore, the hour of greatest impact related to school-generated traffic was not covered in this study. Once the New Romeo High School is operational, adjacent intersections of highest potential traffic impact (specifically, Jewell Road & 29 Mile Road) should be monitored to assess the need for additional traffic control measures that would improve the facilitation of afternoon peak school traffic (e.g. police presence, intersection signalization, etc.)

The total number of site-generated vehicle trips is calculated in **Table 5**. The land uses identified in Table 5 are shown graphically in **Figure 7**. The magnitude and location of daily trips generated by the near-term developments identified in Table 5 are shown graphically in **Figure 8**.

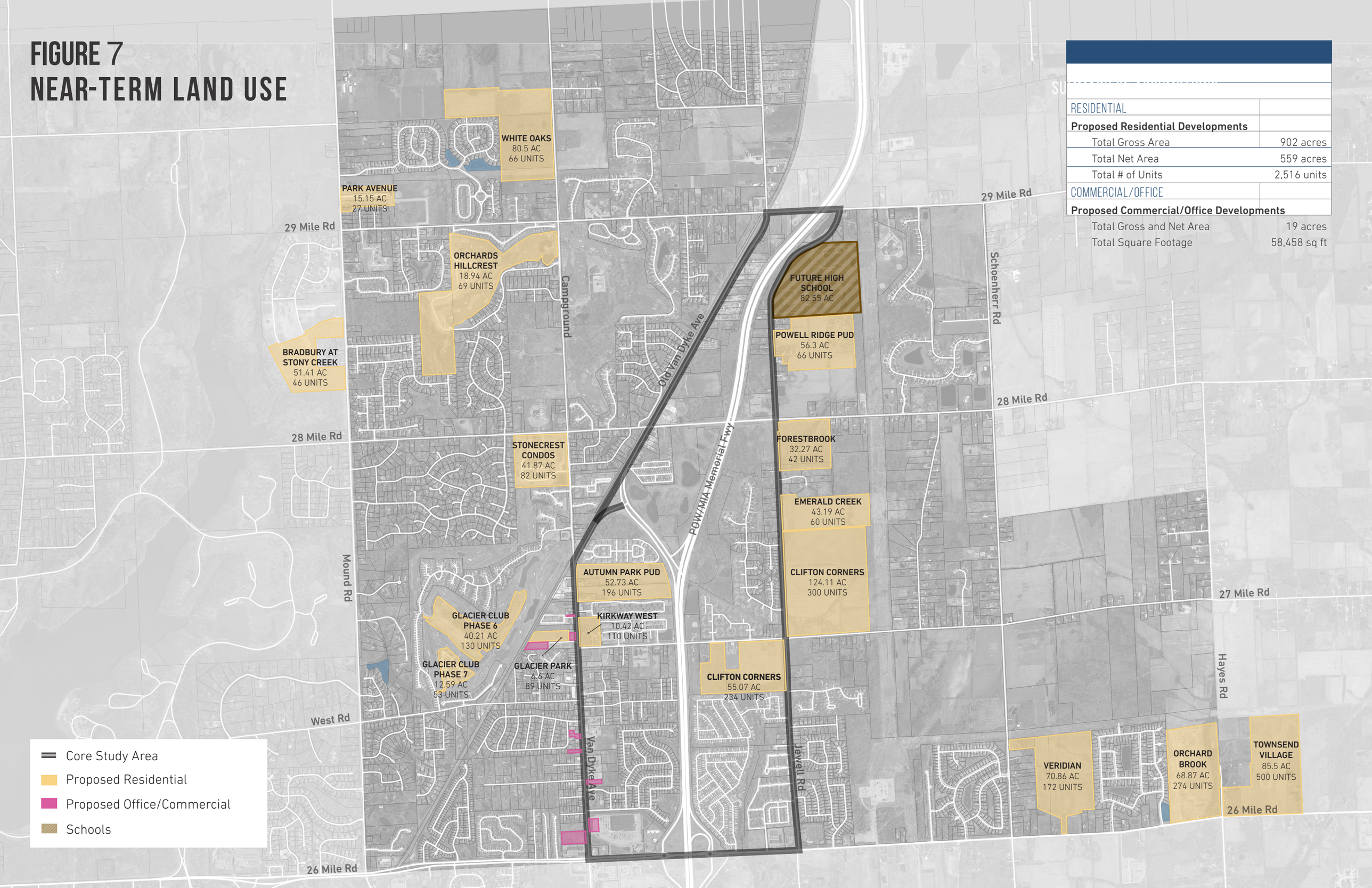
Table 5. Near-Term Development – Site Trip Generation

Near-Term Development Scenario - Residential Trips	Land Use	ITE Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Traffic
Orchard Brook	Multifamily Housing (Low-Rise)	220	274	Dwellings	29	95	124	91	54	145	2,031
Veridian	Single-Family Detached Housing	210	172	Dwellings	32	95	127	108	63	171	1,712
Clifton Corners NE	Single-Family Detached Housing	210	300	Dwellings	55	163	218	184	108	292	2,857
Clifton Corners SW	Single-Family Detached Housing	210	117	Dwellings	22	66	88	74	44	118	1,201
	Multifamily Housing (Low-Rise)	220	117	Dwellings	13	42	55	43	25	68	844
Powell Ridge	Multifamily Housing (Low-Rise)	210	66	Dwellings	13	39	52	43	25	68	709
Stonecrest	Multifamily Housing (Low-Rise)	220	82	Dwellings	9	31	40	32	18	50	579
Autumn Park	Single-Family Detached Housing	210	98	Dwellings	19	55	74	63	37	100	1,021
	Multifamily Housing (Low-Rise)	220	98	Dwellings	11	36	47	37	21	58	700
Newbury on the Green	Multifamily Housing (Low-Rise)	220	89	Dwellings	10	33	43	33	20	53	632
Kirkway West	Multifamily Housing (Low-Rise)	220	110	Dwellings	12	40	52	40	24	64	791
Forestbrook	Multifamily Housing (Low-Rise)	220	42	Dwellings	5	16	21	17	10	27	277
Park Avenue	Single-Family Detached Housing	210	27	Dwellings	6	18	24	18	11	29	312
White Oaks	Single-Family Detached Housing	210	66	Dwellings	13	39	52	43	25	68	709
Orchards Hillcrest	Single-Family Detached Housing	210	69	Dwellings	14	40	54	45	26	71	739
Bradbury at Stony Creek Phase 2	Multifamily Housing (Low-Rise)	220	46	Dwellings	5	18	23	19	11	30	307
Glacier Club Phase 6	Multifamily Housing (Low-Rise)	220	130	Dwellings	14	47	61	47	28	75	942
Glacier Club Phase 7	Multifamily Housing (Low-Rise)	220	53	Dwellings	6	20	26	21	13	34	360
Townsend	Multifamily Housing (Low-Rise)	220	500	Dwellings	51	169	220	156	91	247	3,739
Emerald Creek	Single-Family Detached Housing	210	60	Dwellings	12	35	47	39	23	62	650
Total New Residential Trips			**2,516**		**351**	**1,097**	**1,448**	**1,153**	**677**	**1,830**	**21,112**

Near-Term Development Scenario - School Trips	Land Use	ITE Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Traffic
New Romeo High School	High School	530	1,300	Students	453	223	676	87	95	182	2,722

Near-Term Development Scenario - Commercial Trips	Land Use	ITE Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Traffic
Glacier Park (Phase 2)	General Office Building	710	3,670	S.F.	3	1	4	1	4	5	43
Villages at Capital Pointe	General Office Building	710	5,450	S.F.	5	1	6	1	6	7	63
Newbury on the Green	High-Turnover (Sit-Down) Restauran	932	2,800	S.F.	15	13	28	17	10	27	314
	Pass-By		*43%*	*PM*				*6*	*6*	*12*	
	New Trips				**15**	**13**	**28**	**11**	**4**	**15**	
Michaelangelo	General Office Building	710	7,209	S.F.	7	1	8	1	8	9	83
Proposed Office Expansion (27 Mile)	General Office Building	710	22,000	S.F.	22	4	26	4	23	27	244
Cavataio Office Building	Shopping Center	820	6,000	S.F.	4	2	6	33	35	68	887
	Pass-By		*34%*	*PM*				*12*	*12*	*24*	
	New Trips				**4**	**2**	**6**	**21**	**23**	**44**	
Multiple Buildings (N. of Rite Ait @ 26 Mil	Quality Restaurant	931	10,000	S.F.	4	3	7	52	26	78	838
	Pass-By		*44%*	*PM*				*17*	*17*	*34*	
	New Trips				**4**	**3**	**7**	**35**	**9**	**44**	
	General Office Building	710	30,000	S.F.	30	5	35	6	30	36	330
Unknown	Quality Restaurant	931	9,000	S.F.	4	3	7	47	23	70	755
	Pass-By		*44%*	*PM*				*16*	*16*	*32*	
	New Trips				**4**	**3**	**7**	**31**	**7**	**38**	
	High-Turnover (Sit-Down) Restauran	932	9,000	S.F.	49	40	89	55	33	88	1,010
	Pass-By		*43%*	*PM*				*19*	*19*	*38*	
	New Trips				**49**	**40**	**89**	**36**	**14**	**50**	
Meijer Outlot: Tropical Smoothie	Fast Casual Restaurant	930	1,636	S.F.	2	1	3	13	10	23	516
	Pass-By		43%	PM				*5*	*5*	*10*	
	New Trips				**2**	**1**	**3**	**8**	**5**	**13**	
Meijer Outlot Building	Shopping Center	820	3,744	S.F.	2	2	4	23	25	48	644
	Pass-By		*34%*	*PM*				*8*	*8*	*16*	
	New Trips				**2**	**2**	**4**	**15**	**17**	**32**	
Meijer Outlot: Drive-Thru Restaurant	Fast-Food Restaurant with Drive-Thr	934	2,615	S.F.	54	51	105	44	41	85	1,232
	Pass-By		*49% / 50%*	*AM / PM*	*26*	*26*	*52*	*21*	*21*	*42*	
	New Trips				**28**	**25**	**53**	**23**	**20**	**43**	
Total New Commercial Trips			**113,124**	**S.F.**	**175**	**101**	**276**	**193**	**170**	**363**	**6,959**

FIGURE 7
NEAR-TERM LAND USE



RESIDENTIAL	
Proposed Residential Developments	
Total Gross Area	902 acres
Total Net Area	559 acres
Total # of Units	2,516 units
COMMERCIAL/OFFICE	
Proposed Commercial/Office Developments	
Total Gross and Net Area	19 acres
Total Square Footage	58,458 sq ft

FIGURE 8
TRIP GENERATION
NEAR-TERM DEVELOPMENT SCENARIOS
AVERAGE DAILY TRAFFIC (ADT)

WHITE OAKS
80.5 AC
66 UNITS

PARK AVENUE
15.15 AC
27 UNITS

ORCHARDS HILLCREST
18.94 AC
69 UNITS

BRADBURY AT STONY CREEK
51.41 AC
46 UNITS

FUTURE HIGH SCHOOL
82.55 AC

POWELL RIDGE PUD
56.3 AC
66 UNITS

STONECREST CONDOS
41.87 AC
82 UNITS

FORESTBROOK
32.27 AC
42 UNITS

EMERALD CREEK
43.19 AC
60 UNITS

CLIFTON CORNERS
124.11 AC
300 UNITS

AUTUMN PARK PUD
52.73 AC
196 UNITS

KIRKWAY WEST
10.42 AC
110 UNITS

GLACIER CLUB PHASE 6
40.21 AC
130 UNITS

GLACIER CLUB PHASE 7
12.59 AC
53 UNITS

GLACIER PARK
6.6 AC
89 UNITS

CLIFTON CORNERS
55.07 AC
234 UNITS

VERIDIAN
70.86 AC
172 UNITS

ORCHARD BROOK
68.87 AC
274 UNITS

TOWNSEND VILLAGE
85.5 AC
500 UNITS

29 Mile Rd
28 Mile Rd
27 Mile Rd
26 Mile Rd
West Rd
Campground
Old Van Dyke Ave
POW/MIA Memorial Fwy
Schoenherr Rd
Mound Rd
Van Dyke Ave
Jewell Rd
Hayes Rd

- Core Study Area
- Developable Vacant Land - Low Density Residential
- Proposed Residential
- Schools
- Proposed Office/Commercial

Trip Generation - Average Daily Traffic
- 0-999 ADT
- 1,000-1,999 ADT
- 2,000-2,999 ADT
- 3,000-3,999 ADT

*SEE INSET FOR DETAILED MAP OF PROPOSED COMMERCIAL/OFFICE DEVELOPMENT

PROPOSED COMMERCIAL

- (A) **VILLAGES AT CAPITAL POINTE -** OFFICE, 5 AC
- (B) **GLACIER PARK PHASE 2 -** OFFICE, 2.9 AC
- (C) **OFFICE EXPANSION -** OFFICE, 2.45 AC
- (D) **MICHELANGELO -** OFFICE, 1.18 AC
- (E) **CAVIATO CENTRE -** COMMERCIAL/RETAIL, 1.33 AC
- (F) **UNKNOWN -** RESTAURANT, 1.23 AC
- (G) **MEIJER OUTLOT BUILDINGS -** RESTAURANT/ RETAIL, 0.36 AC
- (H) **MULTIPLE BUILDINGS -** RESTAURANT/ OFFICE, 4.76 AC

The vehicle trips that would be generated by the near-term developments were assigned to the study road network based on existing traffic patterns on the adjacent road network and ITE methodologies. These methods indicate that new site trips will exit the network in the direction of current traffic patterns and return from their direction of origin. Existing outbound and inbound traffic patterns during the AM and PM peak hours, respectively, are assumed to accurately reflect the relationship between residential areas and employment centers in this region. The resulting distribution for site-generated traffic is summarized in **Table 6**. The total number of new trips generated by the near-term developments are shown on **Figure 9.**

Table 6. Near-Term Development Trip Distribution

Residential

To/From	Via	AM / PM	
North	Van Dyke Avenue	10%	13%
	Campground Road	3%	
South	Van Dyke Avenue	11%	17%
	Jewell Road	6%	
East	29 Mile Road	3%	16%
	28 Mile Road	0%	
	27 Mile Road	2%	
	26 Mile Road	11%	
West	29 Mile Road	3%	32%
	28 Mile Road	2%	
	West Road	2%	
	26 Mile Road	25%	
M-53	Van Dyke Rd / 26 Mile Rd	22%	22%
		100%	

Commercial/Retail/Industrial/School

To/From	Via	AM / PM	
North	Van Dyke Avenue	7%	11%
	Campground Road	4%	
South	Van Dyke Avenue	7%	9%
	Jewell Road	2%	
East	29 Mile Road	5%	24%
	28 Mile Road	1%	
	27 Mile Road	2%	
	26 Mile Road	16%	
West	29 Mile Road	4%	31%
	28 Mile Road	8%	
	West Road	3%	
	26 Mile Road	16%	
M-53	Van Dyke Rd / 26 Mile Rd	25%	25%
		100%	

The site-generated vehicle trips from the near-term developments were applied to the existing 2019 traffic volumes to forecast the ***Near-Term Development Traffic Volumes.*** These peak hour traffic volumes are shown on **Figure 10**.

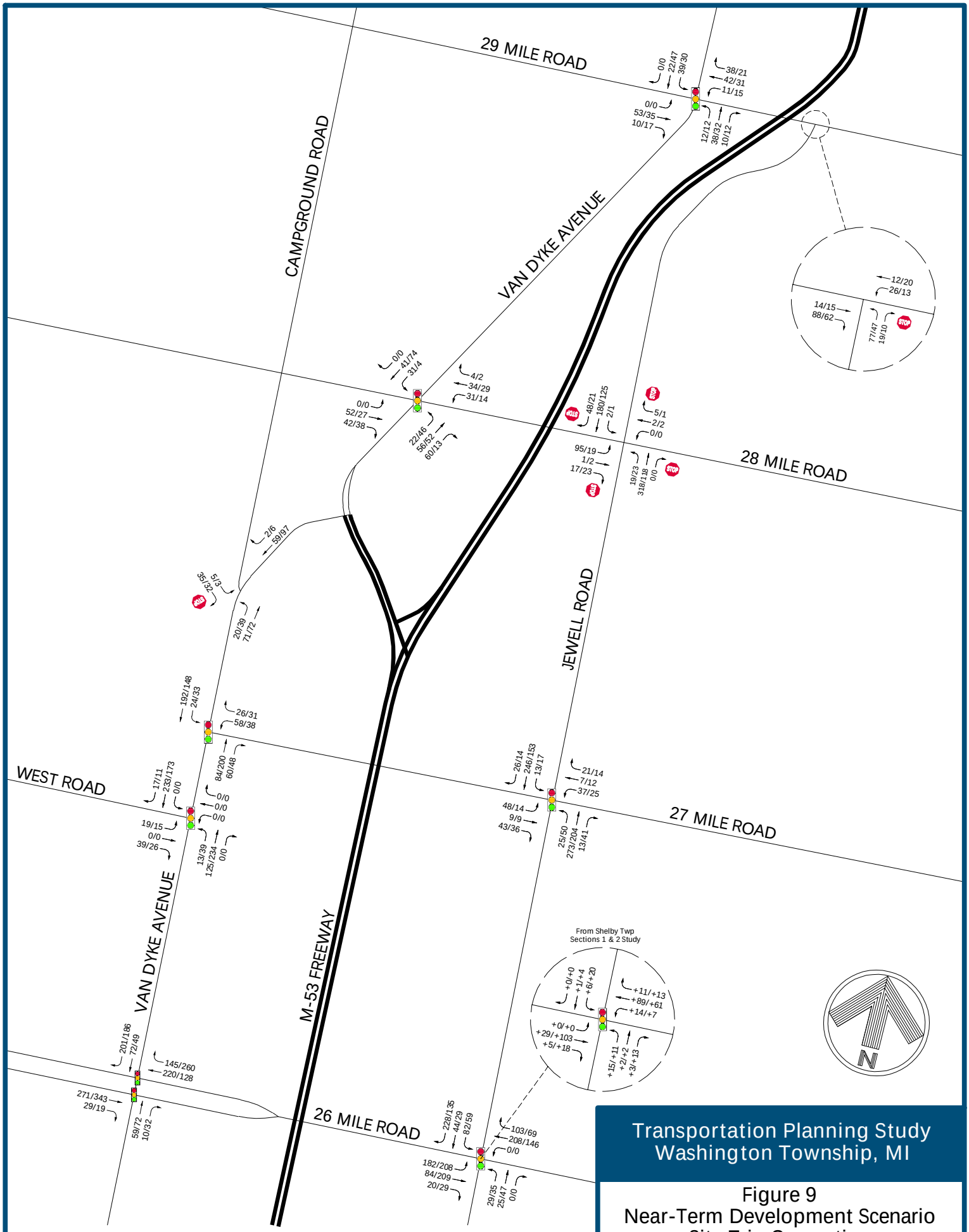


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Figure 9
Near-Term Development Scenario
Site Trip Generation

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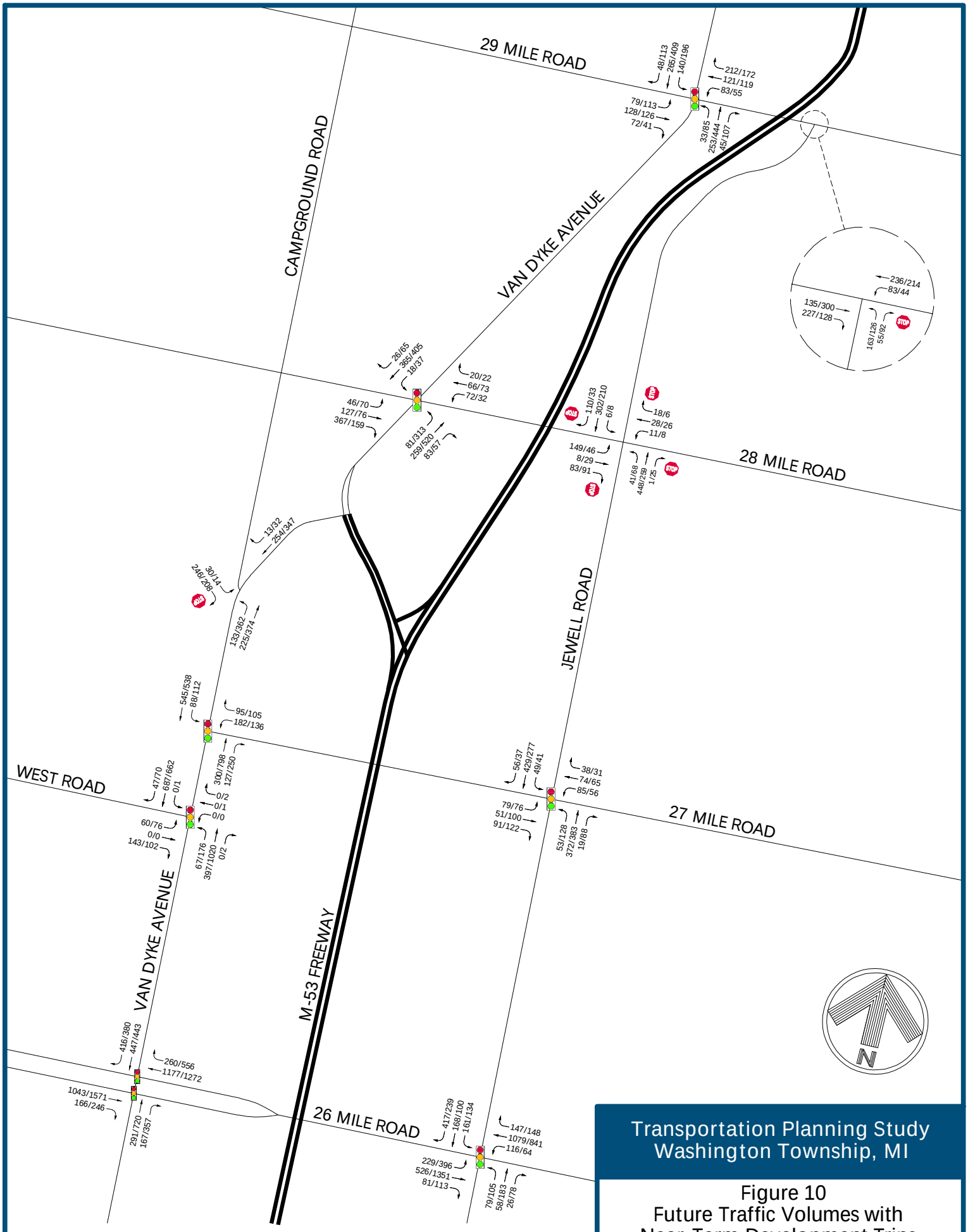

###/### AM/PM PEAK HOUR VOLUME

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Figure 10
Future Traffic Volumes with
Near-Term Development Trips

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Near-Term Development Scenario Traffic Conditions

Peak hour vehicle delays and LOS for the *Near-Term Development Scenario* were calculated at the study intersections based on existing lane configurations and traffic control, the near-term development traffic volumes shown on Figure 10, and the methodologies presented in the *HCM*. The results of the analysis of background conditions are presented in **Appendix D**, summarized in **Table 7**, shown graphically in **Figure 11**, and described in further detail below.

The results of the *Near-Term Development Scenario* analysis indicate that several study intersections currently operate with approaches and/or movements that have high vehicular delays (LOS E or F) during both peak hours. These are displayed in Table 7, with movements operating at a LOS E highlighted in orange and movements operating at a LOS F highlighted in red. To summarize, the following intersections contain approaches or individual movements that operate at a LOS E or F:

- 26 Mile Road & Jewell Road (both AM and PM peak hours);
- Van Dyke Avenue & West Road (both AM and PM peak hours);
- 27 Mile Road & Van Dyke Avenue (both AM and PM peak hours);
- 28 Mile Road & Van Dyke Avenue (AM peak hour only);
- 28 Mile Road & Jewell Road (AM peak hour only); and
- 29 Mile Road & Van Dyke Avenue (both AM and PM peak hours).

Table 7. Near-Term Development Scenario Traffic Conditions

Intersection	Approach	AM Peak Hour				PM Peak Hour				
1. 29 Mile Rd. & Van Dyke Ave.	EB	65.8 E	80.6 F	59.5 E		EB	83.8 F	121.4 F	58.4 E	
Signalized	WB	63.7 E	49.9 D	67.1 E		WB	64.0 E	46.6 D	67.3 E	
	NB	60.3 E	31.5 C	67.9 E	38.9 D	NB	52.2 D	40.4 D	59.1 E	32.9 C
	SB	54.9 D	29.8 C	66.2 E		SB	52.4 D	37.1 D	58.1 E	
	Overall	**60.6**	**LOS**	**E**		**Overall**	**59.2**	**LOS**	**E**	
2. 29 Mile Rd. & Jewell Rd.	EB	0.0 A		Free		EB	0.0 A		Free	
Minor STOP	WB	2.2 A	8.5 A	Free		WB	1.4 A	8.5 A	Free	
	NB	26.1 D	31.7 D		9.6 A	NB	17.1 C	21.4 C		11.2 B
	Overall	**8.7**	**LOS**	**A**		**Overall**	**4.9**	**LOS**	**A**	
3. 28 Mile Rd. & Van Dyke Ave.	EB	94.0 F	23.3 C	100.6 F		EB	33.7 C	29.9 C	34.8 C	
Signalized	WB	58.8 E	103.2 F	21.3 C		WB	29.0 C	37.3 D	26.2 C	
	NB	12.7 B	16.2 B	11.9 B		NB	15.8 B	25.5 C	10.5 B	
	SB	12.1 B	14.0 B	12.0 B		SB	10.0 A	14.1 B	9.6 A	
	Overall	**46.1**	**LOS**	**D**		**Overall**	**18.3**	**LOS**	**B**	
4. 28 Mile Rd. & Jewell Rd.	EB	16.6 C	18.7 C	12.5 B		EB	10.4 B	11.1 B	9.9 A	
All-Way STOP	WB	13.2 B	13.8 B	12.0 B		WB	10.3 B	10.5 B	9.1 A	
	NB	188.2 F	188.6 F	9.2 A		NB	18.2 C	19.0 C	7.9 A	
	SB	48.6 E	61.5 F	12.3 B		SB	12.8 B	13.5 B	8.2 A	
	Overall	**96.6**	**LOS**	**F**		**Overall**	**14.6**	**LOS**	**B**	
5. Van Dyke Ave. & Campground Rd.	EB	16.4 C	16.4 C			EB	11.6 B	11.6 B		
Minor STOP	NB	3.2 A	8.5 A	Free		NB	4.8 A	9.8 A	Free	
	SB	0.0 A		Free		SB	0.0 A		Free	
	Overall	**6.1**	**LOS**	**A**		**Overall**	**4.6**	**LOS**	**A**	
6. 27 Mile Rd. & Van Dyke Ave.	WB	64.5 E	72.5 E		49.1 D	WB	60.9 E	63.8 E		57.1 E
Signalized	NB	45.4 D		45.4 D		NB	36.1 D		36.1 F	
	SB	9.1 A	23.0 C	6.8 A		SB	11.4 B	45.6 D	4.3 A	
	Overall	**31.7**	**LOS**	**C**		**Overall**	**31.2**	**LOS**	**C**	

Intersection	Approach	AM Peak Hour				PM Peak Hour				
7. 27 Mile Rd. & Jewell Rd.	EB	15.2 B	15.2 B			EB	15.5 B	15.5 B		
Signalized	WB	14.9 B	14.9 B			WB	12.8 B	12.8 B		
	NB	9.8 A	9.8 A			NB	13.5 B	13.5 B		
	SB	11.3 B	11.3 B			SB	9.4 A	9.4 A		
	Overall	**11.8**	**LOS**	**B**		**Overall**	**12.7**	**LOS**	**B**	
8. Van Dyke Rd. & West Rd.	EB	62.7 E	46.3 D	69.7 E		EB	59.2 E	54.7 D	62.6 E	
Signalized	WB	0.0 A	0.0 A			WB	49.7 D	49.7 D		
	NB	6.9 A	5.7 A	7.1 A		NB	8.8 A	4.5 A	9.6 A	
	SB	1.9 A	0.0 A	2.0 A	0.1 A	SB	0.9 A	7.2 A	1.0 A	0.1 A
	Overall	**13.4**	**LOS**	**B**		**Overall**	**10.7**	**LOS**	**B**	
9. EB 26 Mile Rd. & Van Dyke Rd.	WB	31.8 C	31.8 C			WB	35.8 D	35.8 D		
Signalized	NB	0.3 A	0.3 A			NB	2.0 A	2.0 A		
	SB	20.1 C	16.9 B	23.5 C		SB	22.8 C	20.2 C	25.8 C	
	Overall	**24.0**	**LOS**	**C**		**Overall**	**25.2**	**LOS**	**C**	
10. WB 26 Mile Rd. & Van Dyke Rd.	EB	28.8 C	28.8 C			EB	34.2 C	34.2 C		
Signalized	NB	19.2 B	19.0 B	19.6 B		NB	26.7 C	26.0 C	28.2 C	
	SB	5.1 A	5.1 A			SB	0.5 A	0.5 A		
	Overall	**20.5**	**LOS**	**C**		**Overall**	**27.2**	**LOS**	**C**	
11. 26 Mile Rd. & Jewell Rd.	EB	54.8 D	163.4 F	14.4 B	10.0 B	EB	82.2 F	129.4 F	74.7 F	6.4 A
Signalized	WB	16.6 B	25.0 C	15.7 B	15.8 B	WB	21.2 C	217.3 F	8.6 A	8.6 A
	NB	41.7 D	50.6 D	33.5 C	32.8 C	NB	51.4 D	59.7 E	49.9 D	43.9 D
	SB	84.7 F	44.0 D	37.7 D	119.3 F	SB	72.6 E	95.0 F	44.1 D	71.9 E
	Overall	**45.7**	**LOS**	**D**		**Overall**	**60.8**	**LOS**	**E**	

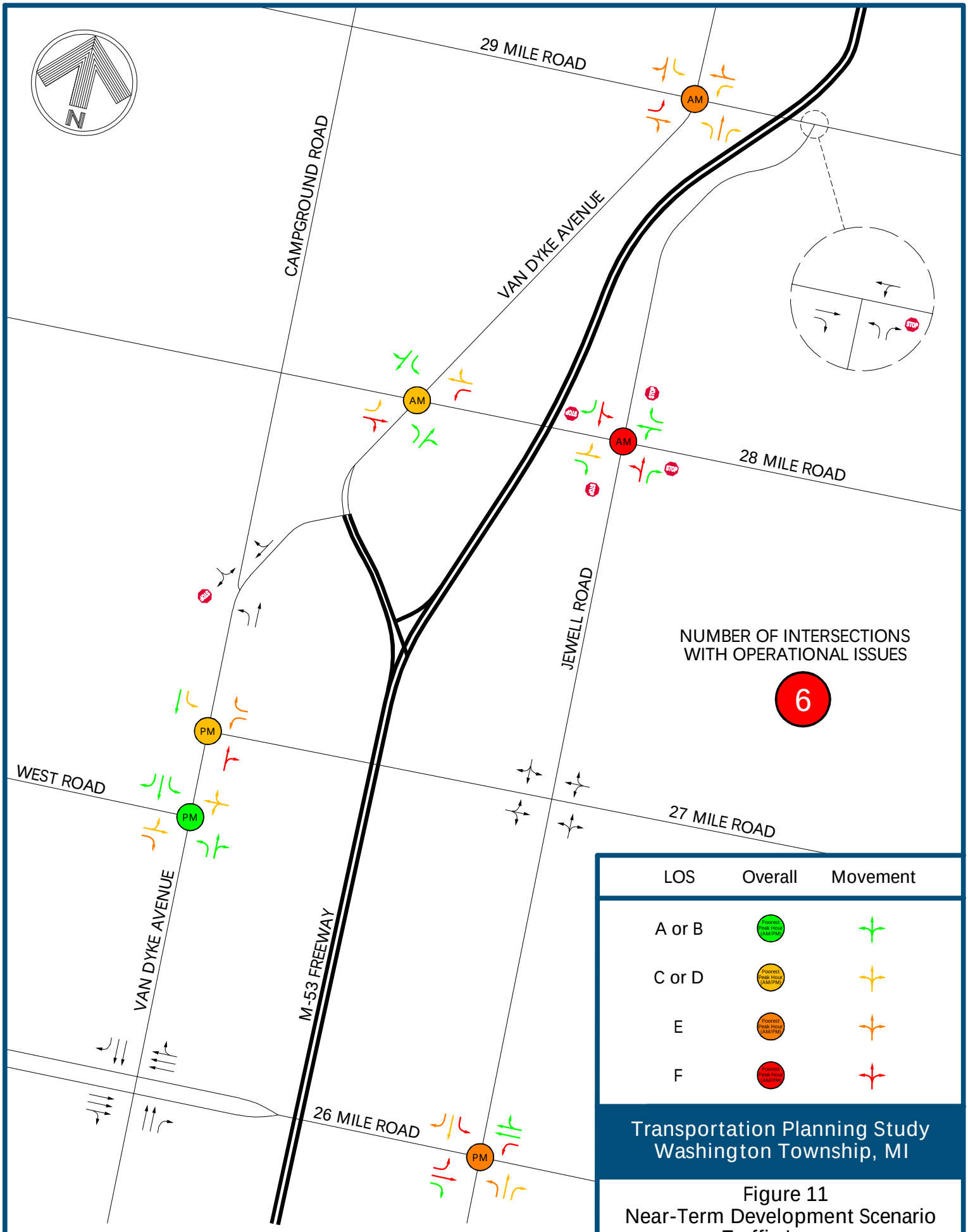

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Figure 11
Near-Term Development Scenario
Traffic Issues

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Near-Term Development Scenario with Improvements

In order to improve traffic operations at all approaches and movements to "acceptable" in the *Near-Term Development Scenario*, mitigation measures were identified at locations were vehicular traffic operations were poor (LOS E or F). A summary of all recommended mitigation measures is shown in **Table 8**. In addition, these recommended mitigation measures are shown graphically in **Figure 12.** These improvements are required above and beyond those improvements that were identified as necessary in the existing condition.

To summarize, the required improvements are as follows:

- 26 Mile Road & Jewell Road: *Widen 26 Mile Road to four lanes from west of Jewell Road to east of Schoenherr Road, modernize the traffic control signal (fully-actuated box span), and implement southbound right turn overlap phasing;*
- Van Dyke Avenue & West Road: *Signal timing adjustments*;
- 27 Mile Road & Van Dyke Avenue: *Construct a northbound right turn lane and implement signal timing adjustments*;
- 28 Mile Road & Van Dyke Avenue: *Signal timing adjustments*;
- 28 Mile Road & Jewell Road: *Install a traffic control signal with two-lane approaches at each leg*; and
- 29 Mile Road & Van Dyke Avenue: *Signal timing adjustments*.

The results of this *Near-Term Development Scenario with Improvements* analysis indicate that with the implementation of all recommended mitigation measures, all approaches and movements at the intersection will operate acceptably as shown in **Table 9**. SimTraffic simulations also indicate acceptable traffic operations with the recommended mitigation measures and significant vehicle queues were not observed.

Table 8. Near-Term Development Scenario Traffic Conditions – Recommended Improvements

Intersection	Approach	
1. 29 Mile Rd. & Van Dyke Ave. Signalized 	EB	---
	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
3. 28 Mile Rd. & Van Dyke Ave. Signalized 	EB	---
	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
4. 28 Mile Rd. & Jewell Rd. All-Way STOP 	EB	Two-Lane Approach w/ LTL
	WB	Two-Lane Approach w/ LTL
	NB	Two-Lane Approach w/ LTL
	SB	Two-Lane Approach w/ LTL
	Overall	**Install Traffic Control Signal**
6. 27 Mile Rd. & Van Dyke Ave. Signalized 	WB	
	NB	Construct Right-Turn Lane
	SB	
	Overall	**Signal Timing Adjustments**
8. Van Dyke Rd. & West Rd. Signalized 	EB	
	WB	
	NB	
	SB	
	Overall	**Signal Timing Adjustments**
11. 26 Mile Rd. & Jewell Rd. Signalized 	EB	Four-lane 26 Mile Road from west of Jewell Rd. to east of Schoenherr Rd.
	WB	
	NB	
	SB	Overlapping Right Turn Phase
	Overall	**Modernize Traffic Control Signal Fully-Actuated Box Span**

New Improvements

Previously-Recommended Improvements

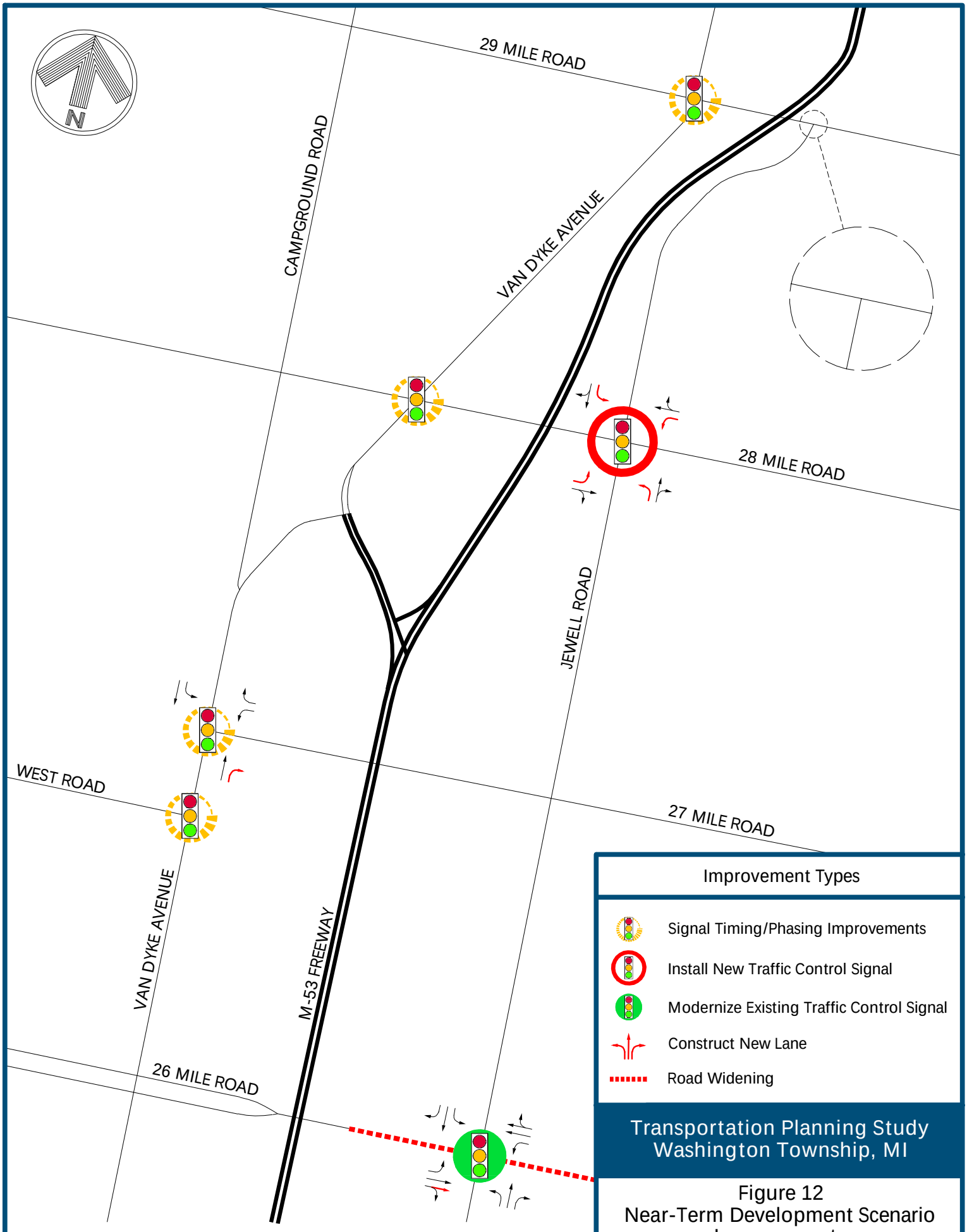

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Figure 12
Near-Term Development Scenario Improvements

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Table 9. Near-Term Development Scenario Traffic Conditions with Improvements

Intersection	AM Peak Hour Approach					PM Peak Hour Approach				
1. 29 Mile Rd. & Van Dyke Ave. Signalized	EB	29.4 C	35.1 D		27.2 C	EB	35.6 D	45.3 D		29.0 C
	WB	30.1 C	26.8 C		30.9 C	WB	36.1 D	29.9 C		37.3 D
	NB	36.3 D	37.0 D	38.5 D	24.0 C	NB	45.5 D	52.6 D	49.0 D	25.2 C
	SB	39.5 D	45.2 D		36.9 D	SB	49.2 D	53.1 D		47.8 D
	Overall		**34.4**	**LOS**	**C**	**Overall**		**43.6**	**LOS**	**D**
3. 28 Mile Rd. & Van Dyke Ave. Signalized	EB	26.5 C	16.6 B		27.4 C	EB	33.7 C	29.9 C		34.8 C
	WB	24.6 C	35.8 D		15.2 B	WB	29.0 C	37.3 D		26.2 C
	NB	20.1 C	25.5 C		18.8 B	NB	15.8 B	25.5 C		10.5 B
	SB	19.0 B	21.6 C		18.9 B	SB	10.0 A	14.1 B		9.6 A
	Overall		**22.5**	**LOS**	**B**	**Overall**		**18.3**	**LOS**	**B**
4. 28 Mile Rd. & Jewell Rd. Signalized	EB	18.9 B	20.2 C		16.9 B	EB	13.8 B	13.4 B		14.0 B
	WB	16.0 B	17.2 B		15.7 B	WB	12.9 B	14.5 B		12.5 B
	NB	15.9 B	23.6 C		15.2 B	NB	14.1 B	16.1 B		13.6 B
	SB	18.8 B	17.4 B		18.8 B	SB	13.1 B	14.9 B		13.1 B
	Overall		**17.6**	**LOS**	**B**	**Overall**		**13.7**	**LOS**	**B**
6. 27 Mile Rd. & Van Dyke Ave. Signalized	WB	33.7 C	35.7 D		30.0 C	WB	38.5 D	39.4 D		37.4 D
	NB	36.8 D		41.3 D	26.1 C	NB	32.7 C		38.6 D	13.7 B
	SB	8.6 A	15.3 B	7.5 A		SB	8.6 A	26.8 C	4.8 A	
	Overall		**22.5**	**LOS**	**C**	**Overall**		**25.5**	**LOS**	**C**
8. Van Dyke Rd. & West Rd. Signalized	EB	31.1 C	26.1 C		33.3 C	EB	43.6 D	40.3 D		46.0 D
	WB	0.0 A	0.0 A			WB	36.7 D	36.7 D		
	NB	9.6 A	19.4 B		7.9 A	NB	11.3 B	10.8 B		11.3 B
	SB	10.5 B	0.0 A	10.9 B	4.5 A	SB	4.9 A	16.9 B	5.1 A	2.7 A
	Overall		**13.4**	**LOS**	**B**	**Overall**		**12.0**	**LOS**	**B**
11. 26 Mile Rd. & Jewell Rd. Signalized	EB	29.4 C	47.7 D	22.4 C	22.5 C	EB	37.6 D	53.5 D	33.1 C	33.5 C
	WB	50.9 D	20.4 C	53.6 D	54.1 D	WB	47.1 D	31.5 C	48.0 D	48.1 D
	NB	39.5 D	40.1 D	39.3 D	38.3 D	NB	45.3 D	42.0 D	48.3 D	42.9 D
	SB	47.7 D	43.5 D	45.6 D	50.2 D	SB	37.7 D	51.1 D	43.1 D	28.0 C
	Overall		**43.6**	**LOS**	**D**	**Overall**		**41.0**	**LOS**	**D**

Long-Term Development Scenario Analysis

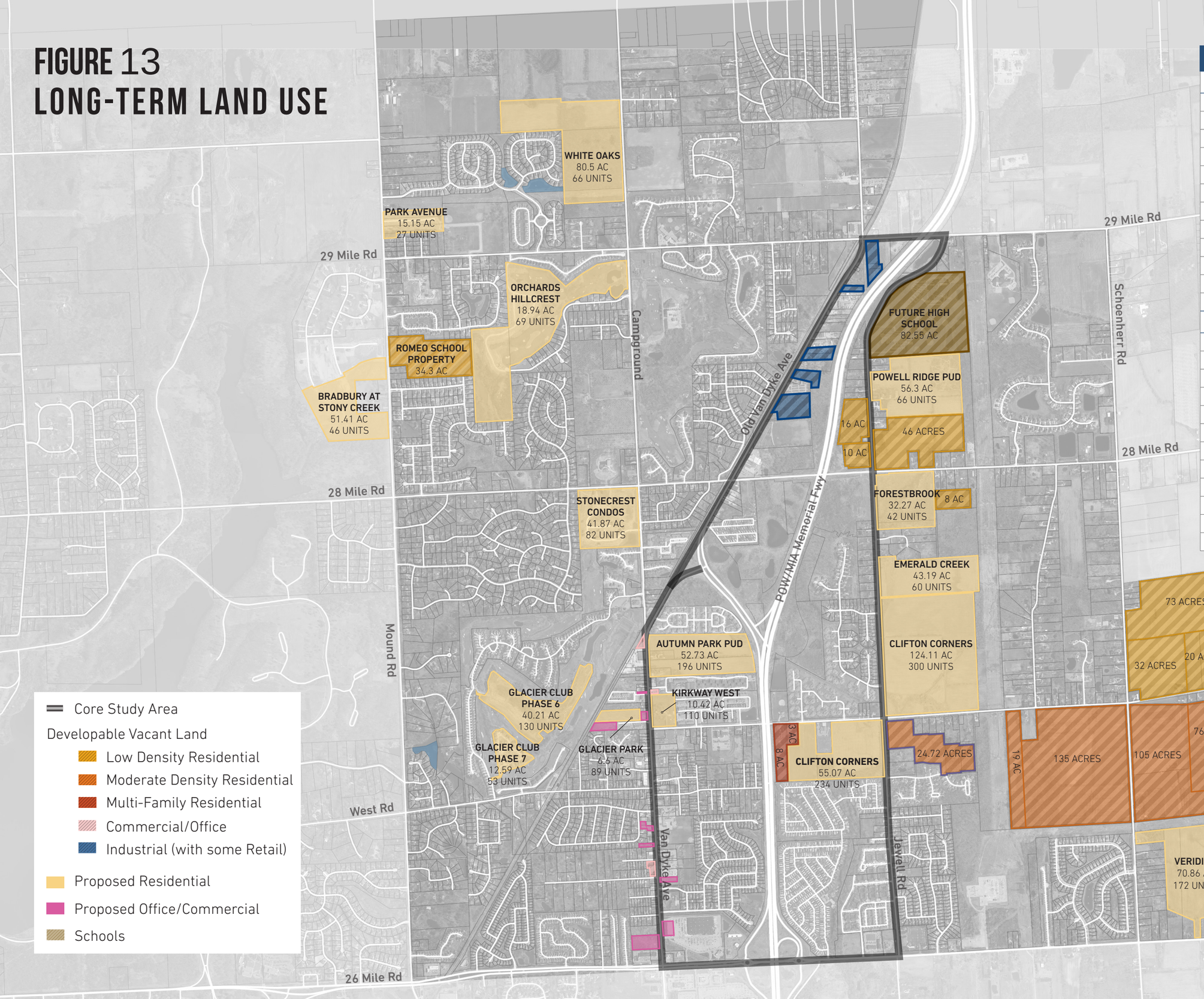
Long-Term Development Traffic Volumes

Long-term development traffic conditions reflect future operations with the full build-out of remaining developable land in and adjacent to the study area. The number of vehicle trips that would be generated by the potential future developable land was forecast based on the methodology and data published by ITE in *Trip Generation, 10th Edition* and the *Trip Generation Handbook, 3rd Edition*. An analysis conducted by MKSK (as shown in Appendix C) revealed that the remaining developable area can support approximately 1,004 new residential units, 58,458 SF of new commercial development, and 239,755 SF of new industrial development. The ITE land uses #210 (Single-Family Detached Housing), #710 (General Office Building), #820 (Shopping Center), and #130 (Industrial Park) were used for this analysis. The total number of site-generated vehicle trips is calculated in **Table 10**. The land uses identified in Table 10 are shown graphically in **Figure 13**. The magnitude and location of daily trips generated by the near-term developments identified in Table 10 are shown graphically in **Figure 14**.

Table 10. Long-Term Developments – Site Trip Generation

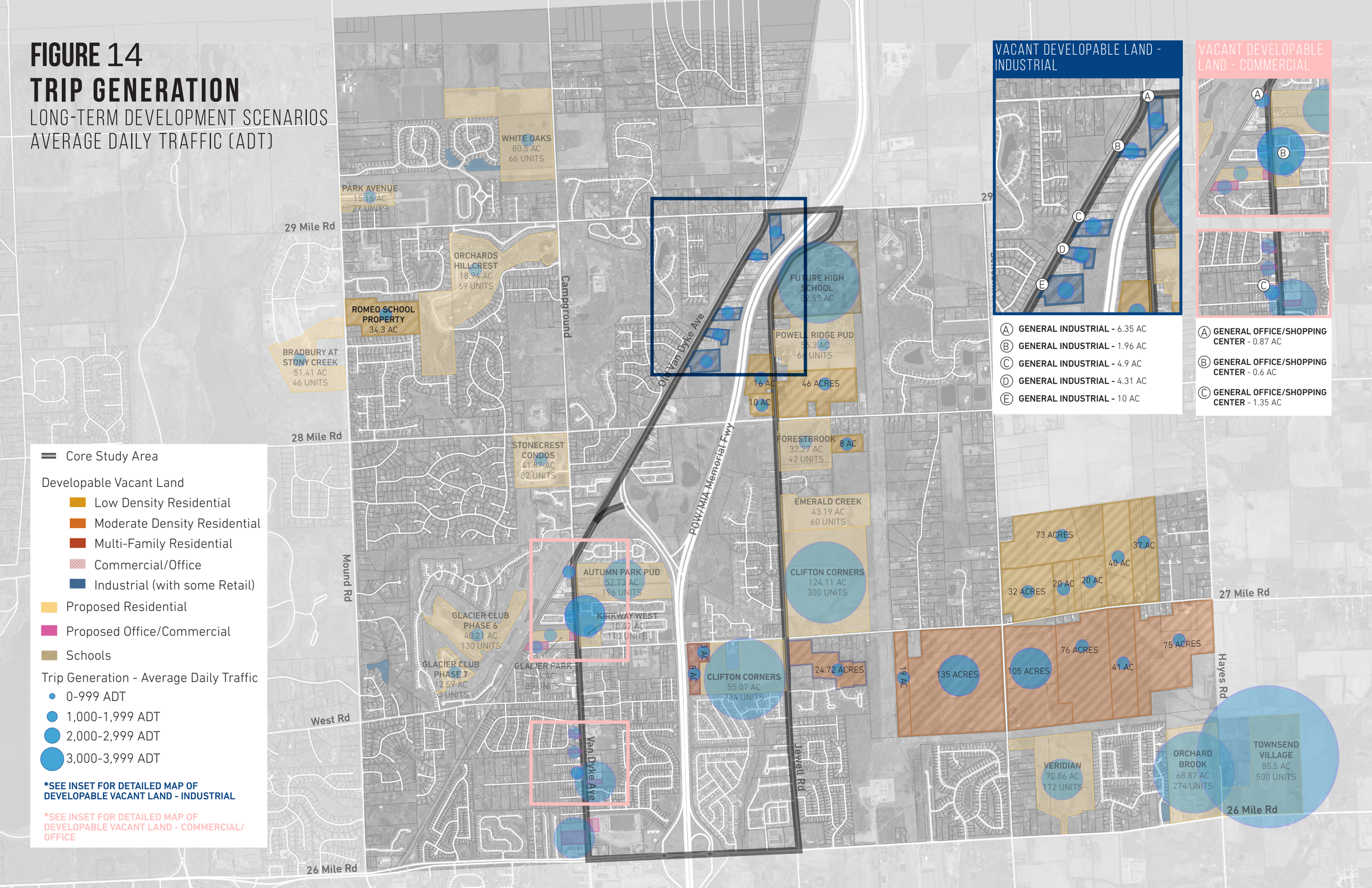
Long-Term Development Scenario - Residential Trips	Land Use	ITE Code	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Average Daily Traffic
Developable Land	Single-Family Detache	210	1,004	Dwellings	180	538	718	586	344	930	8,680
Long-Term Development Scenario - Commercial Trips	**Land Use**	**ITE Code**	**Amount**	**Units**	**AM Peak Hour In**	**AM Peak Hour Out**	**AM Peak Hour Total**	**PM Peak Hour In**	**PM Peak Hour Out**	**PM Peak Hour Total**	**Average Daily Traffic**
	General Office Buildin	710	7,500	S.F.	8	1	9	2	8	10	86
	Shopping Center	820	2,500	S.F.	1	1	2	17	18	35	489
	Pass-By		*34%*	*PM*				*6*	*6*	*12*	
	New Trips				**1**	**1**	**2**	**11**	**12**	**23**	
	General Office Buildin	710	23,966	S.F.	24	4	28	5	24	29	265
	Shopping Center	820	7,989	S.F.	5	3	8	40	44	84	1,078
	Pass-By		*34%*	*PM*				*15*	*15*	*30*	
	New Trips				**5**	**3**	**8**	**25**	**29**	**54**	
	General Office Buildin	710	12,378	S.F.	12	2	14	3	13	16	140
	Shopping Center	820	4,126	S.F.	2	2	4	24	27	51	688
	Pass-By		*34%*	*PM*				*9*	*9*	*18*	
	New Trips				**2**	**2**	**4**	**15**	**18**	**33**	
Total New Commercial Trips			**58,458**	**S.F.**	**52**	**13**	**65**	**61**	**104**	**165**	**2,746**
Long-Term Development Scenario - Industrial Trips	**Land Use**	**ITE Code**	**Amount**	**Units**	**AM Peak Hour In**	**AM Peak Hour Out**	**AM Peak Hour Total**	**PM Peak Hour In**	**PM Peak Hour Out**	**PM Peak Hour Total**	**Average Daily Traffic**
	Industrial Park	130	55,321	S.F.	18	4	22	5	17	22	690
	Industrial Park	130	17,076	S.F.	6	1	7	1	6	7	374
	Industrial Park	130	42,689	S.F.	14	3	17	4	13	17	603
	Industrial Park	130	37,549	S.F.	12	3	15	3	12	15	564
	Industrial Park	130	87,120	S.F.	28	7	35	7	28	35	874
Total New Industrial Trips			**239,755**	**S.F.**	**78**	**18**	**96**	**20**	**76**	**96**	**3,105**

FIGURE 13
LONG-TERM LAND USE



RESIDENTIAL	
Proposed Residential Developments	
Total Gross Area	902 acres
Total Net Area	559 acres
Total # of Units	2,516 units
Total Developable Residential Vacant Land	
Total Gross Area	823 acres
Total Net Area	493 acres
Total # of Units	1,004 units
Total Residential (assuming max density)	
Total Gross Area	1,725 acres
Total Net Area	1,052 acres
Total # of Units	3,520 units
COMMERCIAL/OFFICE/INDUSTRIAL	
Proposed Commercial/Office Developments	
Total Gross and Net Area	19 acres
Total Square Footage	58,458 sq ft
Total Developable Commercial/Office Vacant Land	
Total Gross and Net Area	4 acres
Total Square Footage	58,458 sq ft
Total Developable Industrial Vacant Land	
Total Gross and Net Area	28 acres
Total Square Footage	239,755 sq ft
Total Commercial/Office/Industrial	
Total Gross and Net Area	51 acres
Total Square Footage	411,337 sq ft

FIGURE 14
TRIP GENERATION
LONG-TERM DEVELOPMENT SCENARIOS
AVERAGE DAILY TRAFFIC (ADT)



Core Study Area

Developable Vacant Land
- Low Density Residential
- Moderate Density Residential
- Multi-Family Residential
- Commercial/Office
- Industrial (with some Retail)

Proposed Residential

Proposed Office/Commercial

Schools

Trip Generation - Average Daily Traffic
- 0-999 ADT
- 1,000-1,999 ADT
- 2,000-2,999 ADT
- 3,000-3,999 ADT

***SEE INSET FOR DETAILED MAP OF DEVELOPABLE VACANT LAND - INDUSTRIAL**

***SEE INSET FOR DETAILED MAP OF DEVELOPABLE VACANT LAND - COMMERCIAL/ OFFICE**

VACANT DEVELOPABLE LAND - INDUSTRIAL

- (A) **GENERAL INDUSTRIAL -** 6.35 AC
- (B) **GENERAL INDUSTRIAL -** 1.96 AC
- (C) **GENERAL INDUSTRIAL -** 4.9 AC
- (D) **GENERAL INDUSTRIAL -** 4.31 AC
- (E) **GENERAL INDUSTRIAL -** 10 AC

VACANT DEVELOPABLE LAND - COMMERCIAL

- (A) **GENERAL OFFICE/SHOPPING CENTER** - 0.87 AC
- (B) **GENERAL OFFICE/SHOPPING CENTER** - 0.6 AC
- (C) **GENERAL OFFICE/SHOPPING CENTER** - 1.35 AC

The vehicle trips that would be generated in the *Long-Term Development Scenario* were assigned to the study road network based on existing traffic patterns on the adjacent road network and ITE methodologies. These methods indicate that new site trips will exit the network in the direction of current traffic patterns and return from their direction of origin. Existing outbound and inbound traffic patterns during the AM and PM peak hours, respectively, are assumed to accurately reflect the relationship between residential areas and commercial/employment centers in this region. The resulting distribution for site-generated traffic is summarized in **Table 11**. The total number of new trips generated by the long-term developments are shown on **Figure 15.**

The site-generated vehicle trips from the *Long-Term Development Scenario* were applied to the *Near-Term Development Scenario* total traffic volumes to forecast the ***Long-Term Development Traffic Volumes.*** These peak hour traffic volumes are shown on **Figure 16**.

Table 11. Long-Term Developments Site Trip Distribution

Residential

To/From	Via	AM / PM	
North	Van Dyke Avenue	10%	13%
	Campground Road	3%	
South	Van Dyke Avenue	11%	17%
	Jewell Road	6%	
East	29 Mile Road	3%	16%
	28 Mile Road	0%	
	27 Mile Road	2%	
	26 Mile Road	11%	
West	29 Mile Road	3%	32%
	28 Mile Road	2%	
	West Road	2%	
	26 Mile Road	25%	
M-53	Van Dyke Rd / 26 Mile Rd	22%	22%
		100%	

Commercial/Retail/Industrial/School

To/From	Via	AM / PM	
North	Van Dyke Avenue	7%	11%
	Campground Road	4%	
South	Van Dyke Avenue	7%	9%
	Jewell Road	2%	
East	29 Mile Road	5%	24%
	28 Mile Road	1%	
	27 Mile Road	2%	
	26 Mile Road	16%	
West	29 Mile Road	4%	31%
	28 Mile Road	8%	
	West Road	3%	
	26 Mile Road	16%	
M-53	Van Dyke Rd / 26 Mile Rd	25%	25%
		100%	

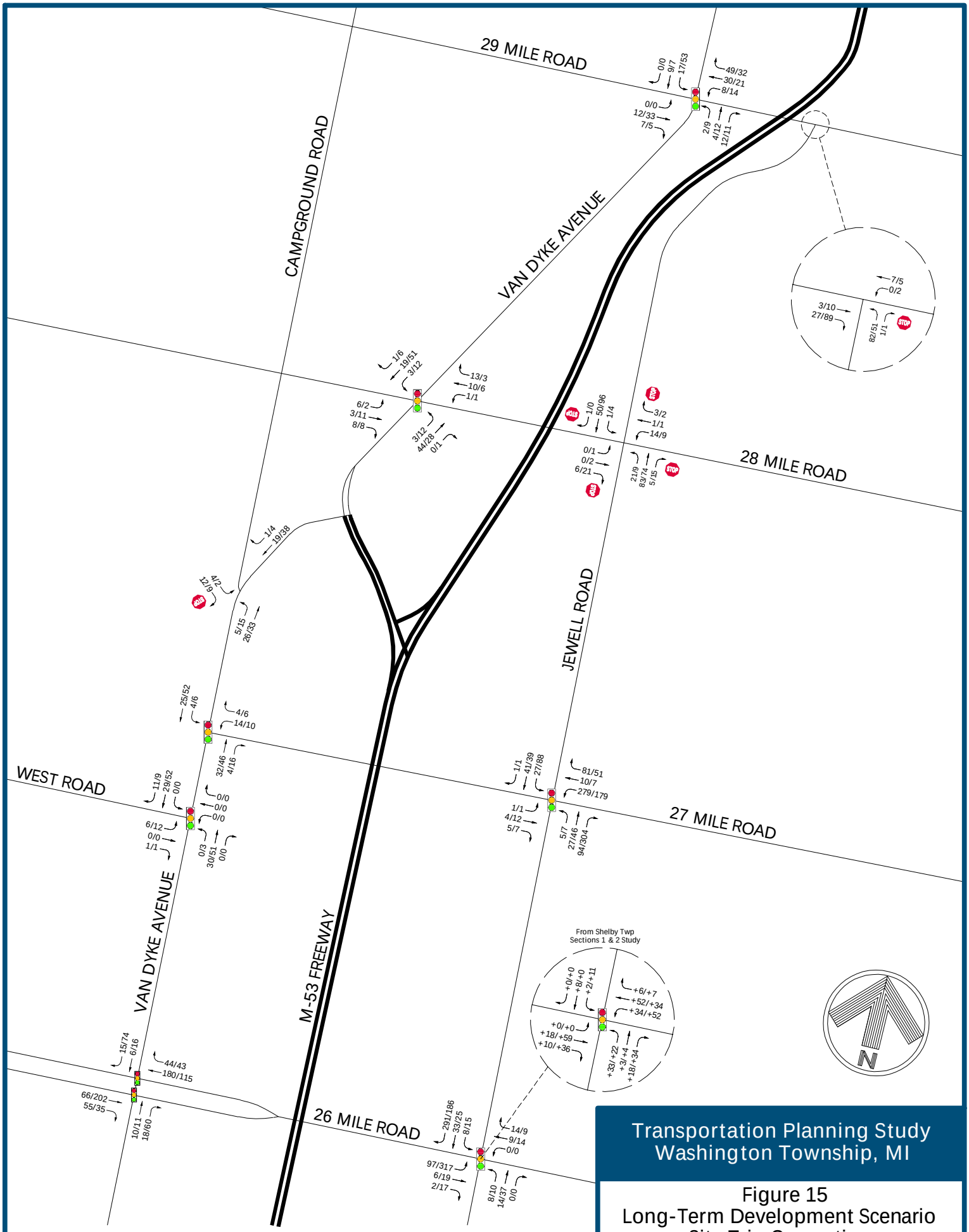


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Figure 15
Long-Term Development Scenario Site Trip Generation

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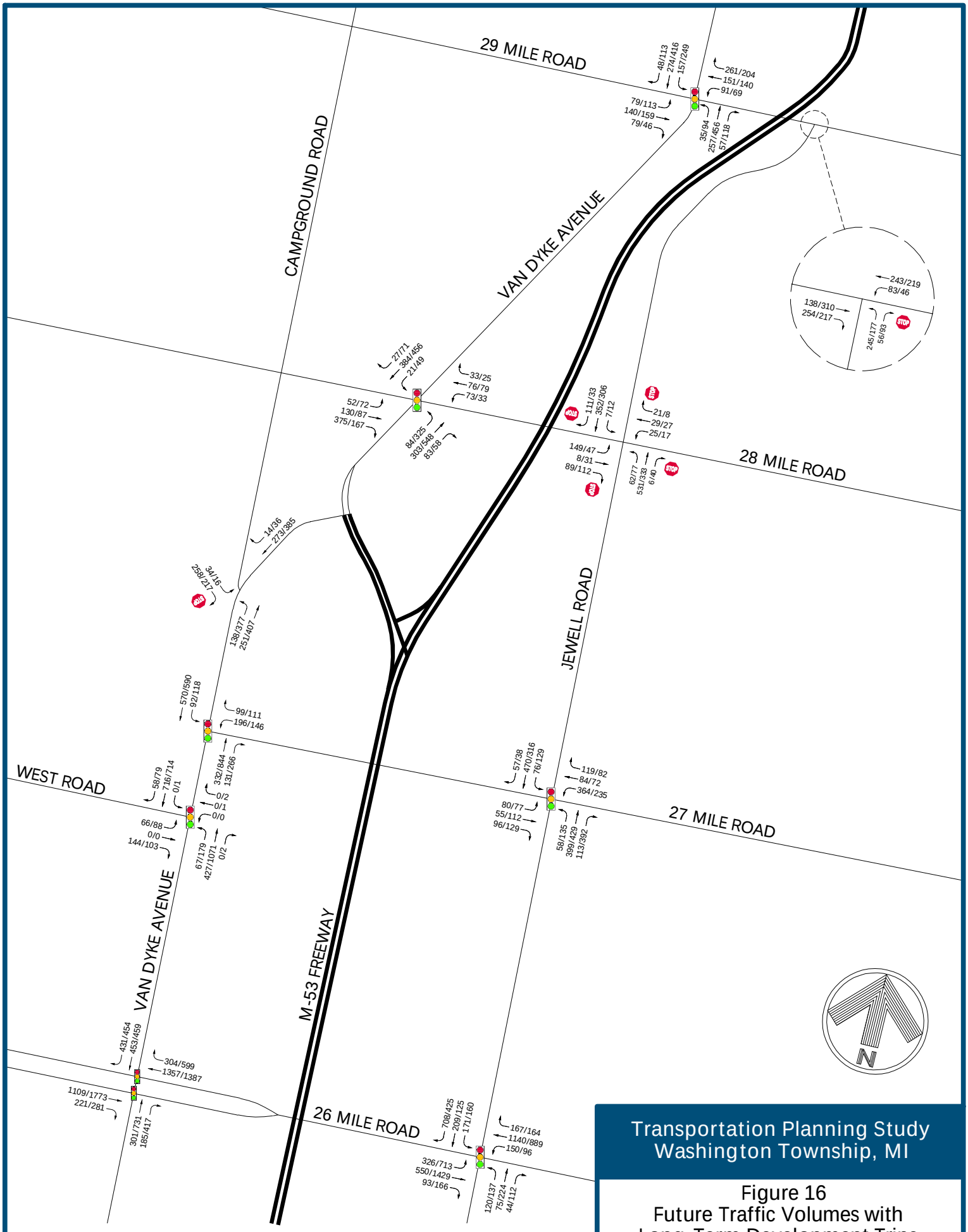

###/### AM/PM PEAK HOUR VOLUME

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Figure 16
Future Traffic Volumes with Long-Term Development Trips

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Long-Term Development Scenario Traffic Conditions

Peak hour vehicle delays and LOS for the *Long-Term Development Scenario* were calculated at the study intersections based on existing lane configurations and traffic control, the near-term development traffic volumes shown on Figure 16, and the methodologies presented in the *HCM*. The results of the analysis of background conditions are presented in **Appendix E**, summarized in **Table 12**, shown graphically in **Figure 17**, and described in further detail below.

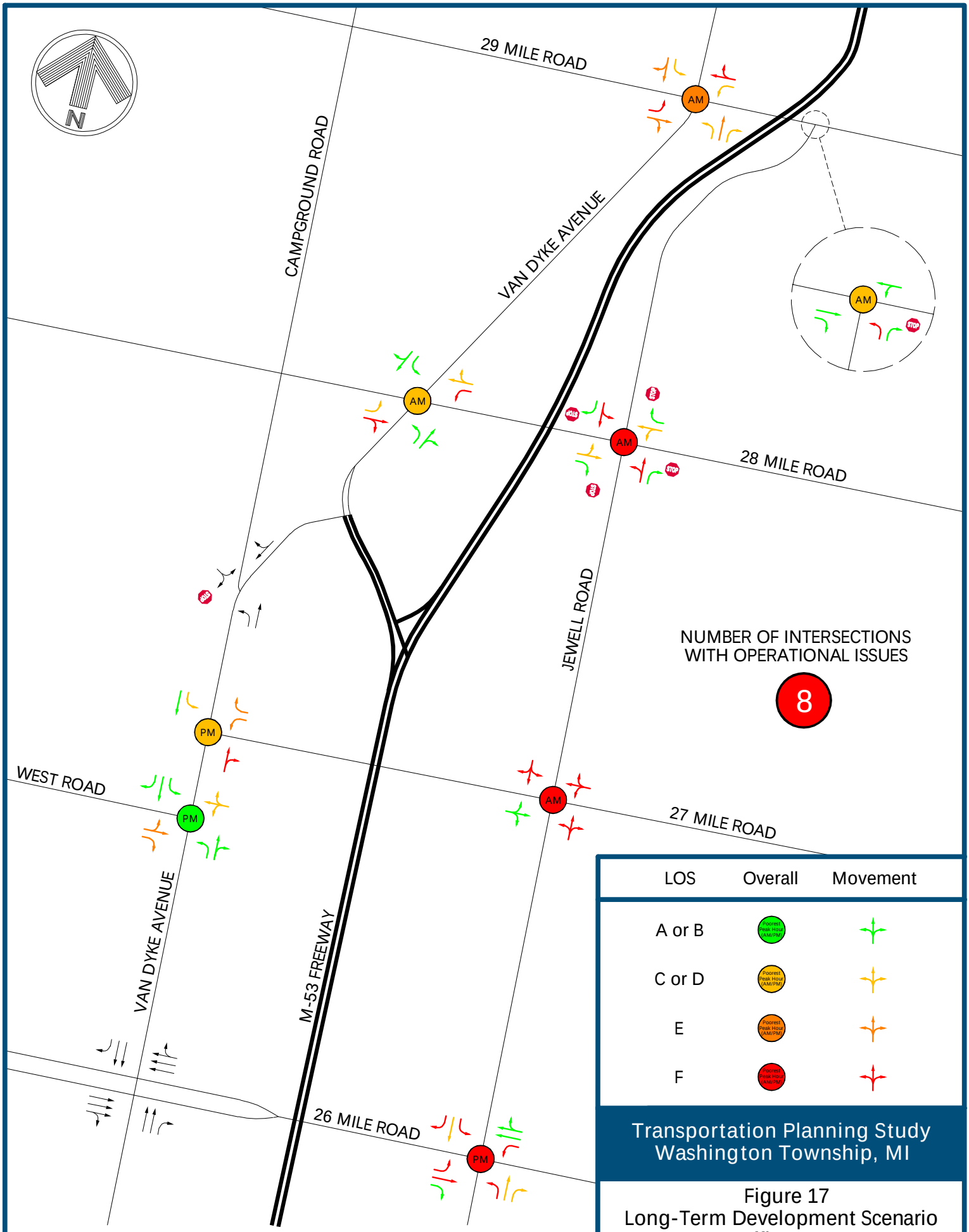
The results of the *Long-Term Development Scenario* analysis indicate that several study intersections currently operate with approaches and/or movements that have high vehicular delays (LOS E or F) during both peak hours. These are displayed in Table 12, with movements operating at a LOS E highlighted in orange and movements operating at a LOS F highlighted in red. To summarize, the following intersections contain approaches or individual movements that operate at a LOS E or F:

- 26 Mile Road & Jewell Road (both AM and PM peak hours);
- Van Dyke Avenue & West Road (both AM and PM peak hours);
- 27 Mile Road & Van Dyke Avenue (both AM and PM peak hours);
- 27 Mile Road & Jewell Road (both AM and PM peak hours);
- 28 Mile Road & Van Dyke Avenue (AM peak hour only);
- 28 Mile Road & Jewell Road (both AM and PM peak hours);
- 29 Mile Road & Van Dyke Avenue (both AM and PM peak hours); and
- 29 Mile Road & Jewell Road (AM peak hour only).

Table 12. Long-Term Development Scenario Traffic Conditions

Intersection	Approach	AM Peak Hour				PM Peak Hour				
		Approach	↰	↑	↱	Approach	↰	↑	↱	
1. 29 Mile Rd. & Van Dyke Ave.	EB	66.6 E	80.6 F	61.5 E		EB	82.0 F	121.4 F	60.3 E	
Signalized	WB	77.9 E	47.6 D	84.6 F		WB	68.9 E	46.1 D	73.5 E	
	NB	59.6 E	35.2 D	67.4 E	39.4 D	NB	51.9 D	44.3 D	58.4 E	32.6 C
	SB	55.2 E	33.6 C	65.7 E		SB	53.7 D	44.8 D	57.8 E	
	Overall	**64.6**	**LOS**	**E**		**Overall**	**60.6**	**LOS**	**E**	
2. 29 Mile Rd. & Jewell Rd.	EB	0.0 A		Free		EB	0.0 A		Free	
Minor STOP	WB	2.2 A	8.6 A	Free		WB	1.5 A	8.9 A	Free	
	NB	77.8 F	93.4 F		9.6 A	NB	23.7 C	30.2 D		11.3 B
	Overall	**29.2**	**LOS**	**D**		**Overall**	**7.0**	**LOS**	**A**	
3. 28 Mile Rd. & Van Dyke Ave.	EB	101.4 F	24.3 C	109.4 F		EB	34.0 C	29.3 C	35.3 D	
Signalized	WB	55.7 E	106.4 F	21.7 C		WB	28.3 C	37.3 D	25.5 C	
	NB	13.4 B	16.9 B	12.6 B		NB	20.6 C	37.4 D	11.7 B	
	SB	12.4 B	15.1 B	12.3 B		SB	11.6 B	16.4 B	11.2 B	
	Overall	**47.8**	**LOS**	**D**		**Overall**	**20.9**	**LOS**	**C**	
4. 28 Mile Rd. & Jewell Rd.	EB	17.8 C	20.2 C	13.7 B		EB	12.1 B	12.5 B	11.8 B	
All-Way STOP	WB	14.8 B	15.5 C	12.9 B		WB	11.9 B	12.2 B	10.2 B	
	NB	323.4 F	326.6 F		9.6 A	NB	40.0 E	43.1 E		8.7 A
	SB	98.1 F	124.3 F		13.3 B	SB	23.7 C	25.2 D		8.8 A
	Overall	**175.9**	**LOS**	**F**		**Overall**	**28.2**	**LOS**	**D**	
5. Van Dyke Ave. & Campground Rd.	EB	18.5 C	18.5 C			EB	12.7 B	12.7 B		
Minor STOP	NB	3.1 A	8.6 A	Free		NB	4.9 A	10.2 B	Free	
	SB	0.0 A		Free		SB	0.0 A		Free	
	Overall	**6.5**	**LOS**	**A**		**Overall**	**4.8**	**LOS**	**A**	
6. 27 Mile Rd. & Van Dyke Ave.	WB	66.0 E	75.1 E		48.1 D	WB	61.7 E	65.7 E		56.4 E
Signalized	NB	42.6 D		42.6 D		NB	54.1 D		54.1 F	
	SB	10.1 B	25.5 C	7.6 A		SB	11.9 B	47.0 D	4.8 A	
	Overall	**31.9**	**LOS**	**C**		**Overall**	**40.9**	**LOS**	**D**	

Intersection	Approach	AM Peak Hour				PM Peak Hour				
		Approach	↰	↑	↱	Approach	↰	↑	↱	
7. 27 Mile Rd. & Jewell Rd.	EB	13.4 B	13.4 B			EB	14.9 B	14.9 B		
Signalized	WB	106.2 F	106.2 F			WB	22.7 C	22.7 C		
	NB	138.6 F	138.6 F			NB	253.1 F	253.1 F		
	SB	153.8 F	153.8 F			SB	158.6 F	158.6 F		
	Overall	**121.4**	**LOS**	**F**		**Overall**	**153.1**	**LOS**	**F**	
8. Van Dyke Rd. & West Rd.	EB	62.5 E	46.6 D		69.8 E	EB	59.3 E	55.7 E		62.3 E
Signalized	WB	0.0 A	0.0 A			WB	49.5 D	49.5 D		
	NB	7.4 A	5.9 A	7.6 A		NB	10.2 B	4.9 A	11.1 B	
	SB	2.1 A	0.0 A	2.3 A	0.1 A	SB	1.1 A	9.6 A	1.2 A	0.1 A
	Overall	**13.5**	**LOS**	**B**		**Overall**	**11.5**	**LOS**	**B**	
9. EB 26 Mile Rd. & Van Dyke Rd.	WB	28.0 C		28.0 C		WB	40.1 D		40.1 D	
Signalized	NB	0.3 A		0.3 A		NB	2.2 A		2.2 A	
	SB	26.7 C		21.7 C	31.9 C	SB	26.9 C		21.4 C	32.4 C
	Overall	**24.4**	**LOS**	**C**		**Overall**	**28.9**	**LOS**	**C**	
10. WB 26 Mile Rd. & Van Dyke Rd.	EB	24.2 C		24.2 C		EB	41.7 D		41.7 D	
Signalized	NB	24.1 C		23.5 C	24.9 C	NB	29.6 C		27.6 C	32.9 C
	SB	6.4 A		6.4 A		SB	0.5 A		0.5 A	
	Overall	**19.9**	**LOS**	**C**		**Overall**	**32.7**	**LOS**	**C**	
11. 26 Mile Rd. & Jewell Rd.	EB	163.9 F	163.4 F	14.4 B	10.0 B	EB	247.9 F	600.4 F	99.9 F	6.6 A
Signalized	WB	17.9 B	25.0 C	15.7 B	15.8 B	WB	44.5 D	436.0 F	8.8 A	8.8 A
	NB	66.1 E	50.6 D	33.5 C	32.8 C	NB	64.5 E	95.4 F	54.6 D	46.5 D
	SB	307.2 F	44.0 D	37.7 D	119.3 F	SB	232.1 F	217.9 F	45.7 D	292.4 F
	Overall	**147.0**	**LOS**	**F**		**Overall**	**176.1**	**LOS**	**F**	



Transportation Planning Study
Washington Township, MI

Figure 17
Long-Term Development Scenario
Traffic Issues

PAGE NO.	SCALE	DATE
45	No Scale	May '19

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Long-Term Developments Scenario with Improvements

In order to improve traffic operations at all approaches and movements to "acceptable" in the *Long-Term Development Scenario*, mitigation measures were identified at locations were vehicular traffic operations were poor (LOS E or F). A summary of all recommended mitigation measures is shown in **Table 13**. In addition, these recommended mitigation measures are shown graphically on **Figure 18.** These improvements are required above and beyond those improvements that were identified as necessary in the existing condition and in the *Near-Term Development Scenario*.

To summarize, the required improvements are as follows:

- 26 Mile Road & Jewell Road: *Significant capacity improvements are required at 26 Mile Road & Jewell Road. This may include dual eastbound left turn lanes (requiring widening of Jewell Road), dual southbound left turn lanes, or converting 26 Mile Road east of M-53 to a boulevard section;*
- Van Dyke Avenue & West Road: *Signal timing adjustments*;
- 27 Mile Road & Van Dyke Avenue: *Signal timing adjustments*;
- 27 Mile Road & Jewell Road: M*odernize the traffic control signal, construct two-lane approaches on the westbound and southbound legs, and construct three-lane approaches on the eastbound and northbound legs*;
- 28 Mile Road & Van Dyke Avenue: *Signal timing adjustments*;
- 28 Mile Road & Jewell Road: *No further improvements beyond signalization are required*;
- 29 Mile Road & Van Dyke Avenue: *Construct a westbound right turn lane and implement signal timing adjustments;*
- 29 Mile Road & Jewell Road: *Install a traffic control signal with two-lane approaches at each leg;* and
- Jewell Road Corridor: *Widen Jewell Road between 26 Mile Road and 27 Mile Road.*

The results of this *Long-Term Development Scenario with Improvements* analysis indicate that with the implementation of all recommended mitigation measures, all approaches and movements at the intersection will operate acceptably as shown in **Table 14**. SimTraffic simulations also indicate acceptable traffic operations at nine of the ten intersections with the recommended mitigation measures and significant vehicle queues were not observed. The exception was the 26 Mile Road & Jewell Road intersection. The analysis of this intersection revealed insufficient capacity and failing operations, particularly for the eastbound left turn and southbound right turn to/from the M-53 interchange, even when dual turn lanes were modeled at these approaches. Extensive failing operations that persist even when significant capacity improvements are assumed require mitigation methods of a greater scale. In the case of 26 Mile Road, a boulevard cross-section should be considered to facilitate the large volumes of turning vehicles, effectively removing them from the functional area of the intersection traffic control signal at Jewell Road and adding capacity downstream to complete an indirect left turn. Similar to the cross section west of M-53, a widened boulevard cross-

section on 26 Mile Road would likely need to include dual turn lanes at crossovers to accommodate this future demand. Specific design requirements including crossover locations, traffic controls, lane configurations, and storage lane lengths should be determined during the design phase for widening of 26 Mile Road.

With the anticipated volume increases along Jewell Road between 26 Mile Road and 27 Mile Road, Jewell Road should be widened to have at least three lanes. With the number and location/offset of driveways and subdivision street approaches along Jewell Road, a three lane section with a center left turn lane may be more desirable than a 4-lane section. Widening should consider transitions to the lane configurations at Mile Road intersections, particularly at 26 Mile Road.

Table 13. Long-Term Development Scenario Traffic Conditions – Recommended Improvements

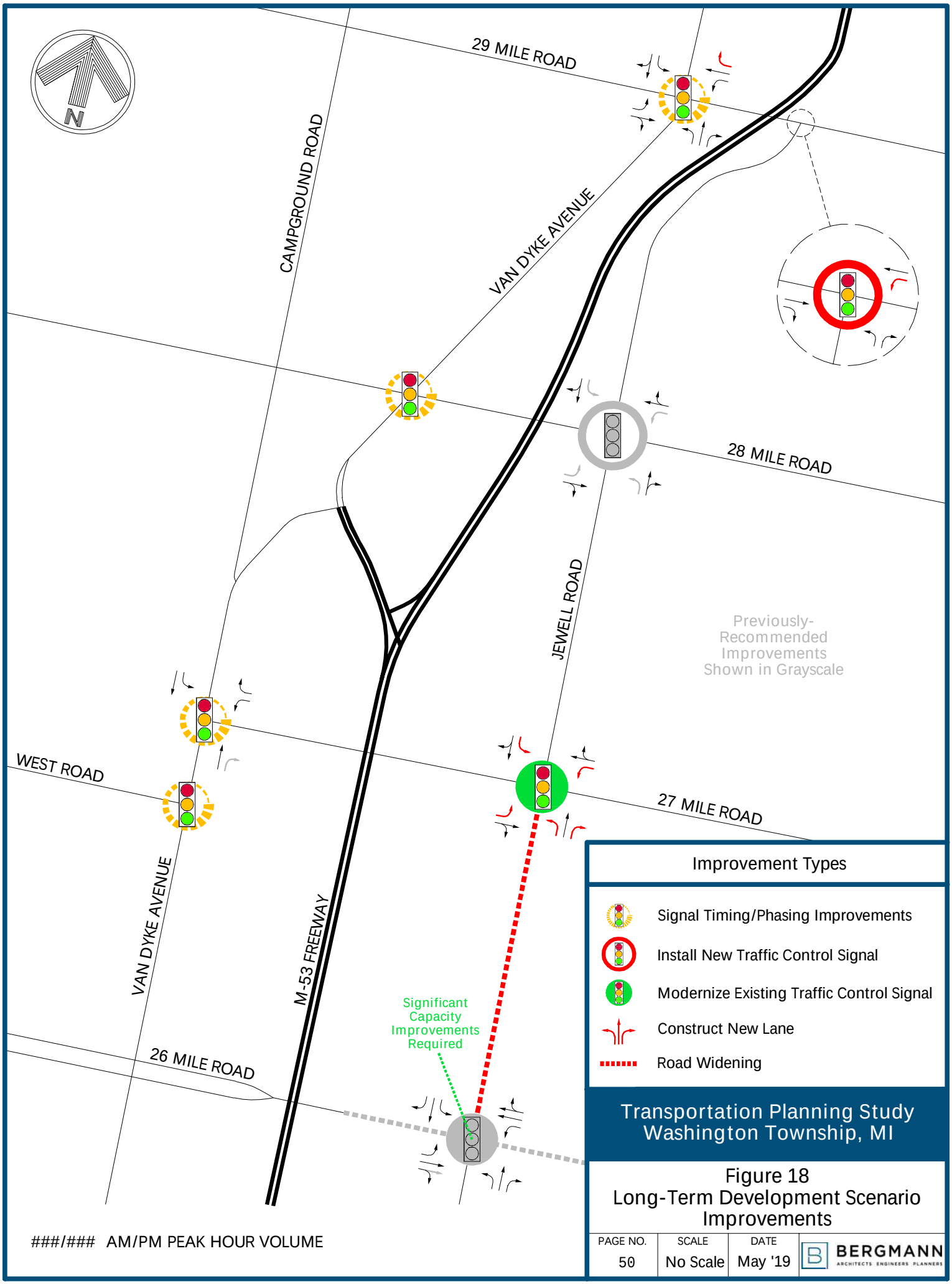
Intersection	Approach	
1. 29 Mile Rd. & Van Dyke Ave. Signalized	EB	---
	WB	Construct Right-Turn Lane
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
2. 29 Mile Rd. & Jewell Rd. Minor STOP	EB	---
	WB	Two-Lane Approach w/ LTL
	NB	---
	Overall	**Install Traffic Control Signal**
3. 28 Mile Rd. & Van Dyke Ave. Signalized	EB	---
	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
4. 28 Mile Rd. & Jewell Rd. All-Way STOP	EB	*Two-Lane Approach w/ LTL*
	WB	*Two-Lane Approach w/ LTL*
	NB	*Two-Lane Approach w/ LTL*
	SB	*Two-Lane Approach w/ LTL*
	Overall	***Install Traffic Control Signal***

Intersection	Approach	
6. 27 Mile Rd. & Van Dyke Ave. Signalized	WB	---
	NB	*Construct Right-Turn Lane*
	SB	---
	Overall	**Signal Timing Adjustments**
7. 27 Mile Rd. & Jewell Rd. Signalized	EB	Three-Lane Approach w/ LTL, RTL
	WB	Two-Lane Approach w/ LTL
	NB	Three-Lane Approach w/ LTL, RTL
	SB	Two-Lane Approach w/ LTL
	Overall	**Modernize Traffic Control Signal**
8. Van Dyke Rd. & West Rd. Signalized	EB	---
	WB	---
	NB	---
	SB	---
	Overall	**Signal Timing Adjustments**
11. 26 Mile Rd. & Jewell Rd. Signalized	EB	**Significant Capacity Improvements Required**
	WB	
	NB	
	SB	
	Overall	

Table 14. Long-Term Development Scenario Traffic Conditions with Improvements

Intersection	Approach	AM Peak Hour				PM Peak Hour			
1. 29 Mile Rd. & Van Dyke Ave.	EB	28.3 C	25.8 C	29.2 C		EB	40.8 D	40.2 D	41.1 D	
Signalized	WB	26.0 C	29.0 C	21.7 C	27.4 C	WB	35.7 D	38.2 D	30.9 C	38.1 D
	NB	35.6 D	37.4 D	37.9 D	24.2 C	NB	39.5 D	42.5 D	42.9 D	23.9 C
	SB	40.9 D	49.0 D	37.0 D		SB	47.9 D	53.0 D	45.5 D	
	Overall		**33.1**	**LOS**	**C**	**Overall**		**41.8**	**LOS**	**D**
2. 29 Mile Rd. & Jewell Rd.	EB	18.9 B		15.4 B	20.8 C	EB	12.8 B		13.1 B	12.4 B
Signalized	WB	17.9 B	19.3 B	17.5 B		WB	12.6 B	16.0 B	11.9 B	
	NB	12.1 B	12.8 B		9.1 A	NB	12.8 B	13.2 B		12.0 B
	Overall		**16.1**	**LOS**	**B**	**Overall**		**12.7**	**LOS**	**B**
3. 28 Mile Rd. & Van Dyke Ave.	EB	29.3 C	14.9 B	30.8 C		EB	37.7 D	32.0 C	39.4 D	
Signalized	WB	22.8 C	36.7 D	13.5 B		WB	30.8 C	40.7 D	27.6 C	
	NB	19.8 B	24.2 C	18.9 B		NB	24.5 C	45.2 D	13.4 B	
	SB	18.3 B	20.9 C	18.2 B		SB	13.4 B	19.2 B	12.9 B	
	Overall		**23.0**	**LOS**	**C**	**Overall**		**24.0**	**LOS**	**C**
4. 28 Mile Rd. & Jewell Rd.	EB	18.8 B	20.1 C	16.8 B		EB	15.4 B	14.6 B	15.7 B	
Signalized	WB	16.2 B	17.6 B	15.5 B		WB	14.5 B	16.5 B	13.6 B	
	NB	16.3 B	25.7 C	15.3 B		NB	12.1 B	14.8 B	11.5 B	
	SB	17.7 B	18.0 B	17.7 B		SB	11.2 B	13.3 B	11.1 B	
	Overall		**17.2**	**LOS**	**B**	**Overall**		**12.4**	**LOS**	**B**

Intersection	Approach	AM Peak Hour				PM Peak Hour			
6. 27 Mile Rd. & Van Dyke Ave.	WB	32.6 C	34.2 C		29.5 C	WB	33.7 C	34.1 C		33.1 C
Signalized	NB	1.9 A		2.2 A	1.0 A	NB	9.3 A		11.9 B	1.0 A
	SB	13.1 B	12.1 B	13.3 B		SB	10.1 B	13.3 B	9.5 A	
	Overall		**13.5**	**LOS**	**B**	**Overall**		**12.8**	**LOS**	**B**
7. 27 Mile Rd. & Jewell Rd.	EB	43.7 D	35.8 D	44.5 D	49.8 D	EB	32.6 C	26.5 C	32.9 C	36.0 D
Signalized	WB	52.3 D	53.9 D	49.4 D		WB	29.4 C	28.9 C	30.1 C	
	NB	30.9 C	37.2 D	35.5 D	11.3 B	NB	26.2 C	24.3 C	31.8 C	20.8 C
	SB	47.9 D	28.2 C	50.7 D		SB	32.9 C	28.3 C	34.6 C	
	Overall		**43.2**	**LOS**	**D**	**Overall**		**29.5**	**LOS**	**C**
8. Van Dyke Rd. & West Rd.	EB	35.3 D	29.9 C		37.8 D	EB	43.5 D	40.9 D		45.7 D
Signalized	WB	0.0 A	0.0 A			WB	36.6 D	36.6 D		
	NB	11.3 B	8.7 A	11.7 B		NB	12.3 B	5.2 A	13.4 B	
	SB	4.0 A	0.0 A	4.3 A	0.1 A	SB	1.2 A	11.1 B	1.4 A	0.1 A
	Overall		**11.6**	**LOS**	**B**	**Overall**		**11.3**	**LOS**	**B**
11. 26 Mile Rd. & Jewell Rd.	EB	29.7 C	45.3 D	22.2 C	19.4 B	EB	39.7 D	56.5 E	33.7 C	18.6 B
Signalized	WB	62.9 E	24.9 C	72.5 F	31.8 C	WB	49.2 D	40.0 D	52.7 D	35.7 D
	NB	51.8 D	62.7 E	41.1 D	40.3 D	NB	49.4 D	48.0 D	52.3 D	45.2 D
	SB	121.1 F	47.7 D	51.4 D	159.5 F	SB	40.4 D	63.1 E	44.5 D	30.7 C
	Overall		**71.1**	**LOS**	**E**	**Overall**		**43.1**	**LOS**	**D**


29 MILE ROAD
CAMPGROUND ROAD
VAN DYKE AVENUE
28 MILE ROAD
JEWELL ROAD
Previously-
Recommended
Improvements
Shown in Grayscale
WEST ROAD
27 MILE ROAD
VAN DYKE AVENUE
M-53 FREEWAY
Significant
Capacity
Improvements
Required
26 MILE ROAD
###/### AM/PM PEAK HOUR VOLUME
Improvement Types
Signal Timing/Phasing Improvements
Install New Traffic Control Signal
Modernize Existing Traffic Control Signal
Construct New Lane
Road Widening
Transportation Planning Study
Washington Township, MI
Figure 18
Long-Term Development Scenario
Improvements
PAGE NO. 50
SCALE No Scale
DATE May '19
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Conclusions and Recommendations

Overall, the conclusions of this Traffic Impact Study are as follows:

1. Existing conditions analyses indicated that several network deficiencies cause many approaches and/or movements to operate at a LOS E or F at three of the ten study intersections during both peak periods. Minor improvements can be implemented in the existing condition to mitigate multiple failing approaches and/or movements.
2. Additional traffic volumes in the *Near-Term Development Scenario* considering near-term developments and ambient traffic growth in the area will result in degraded operations at six of the ten study intersections, requiring additional improvements including the installation/modernization of multiple traffic control signals and the widening of 26 Mile Road through Jewell Road.
3. Additional traffic volumes in the *Long-Term Development Scenario* considering the long-term build-out of the developable vacant lands and redevelopment of existing properties will result in further degraded operations at eight of the ten study intersections, requiring additional improvements including the installation/modernization of multiple traffic control signals and significant capacity improvements at 26 Mile Road & Jewell Road.

Based on the results of this study, the following should be considered to provide acceptable traffic operations due to ***existing network deficiencies:***

1. Make signal timing adjustments at Van Dyke Avenue & West Road;
2. Make signal timing adjustments at 27 Mile Road & Van Dyke Avenue; and
3. Make signal timing adjustments at 29 Mile Road & Van Dyke Avenue.

Based on the results of this study, the following should be required to provide acceptable traffic operations ***with the build-out of the Near-Term Development Scenario:***

1. Widen 26 Mile Road to four lanes from west of Jewell Road to east of Schoenherr Road, modernize the traffic control signal at 26 Mile Road & Jewell Road (fully-actuated box span), and implement southbound right turn overlap phasing;
2. Make signal timing adjustments at Van Dyke Avenue & West Road;
3. Construct a northbound right turn lane and implement signal timing adjustments at 27 Mile Road & Van Dyke Avenue;
4. Make signal timing adjustments at 28 Mile Road & Van Dyke Avenue;
5. Install a traffic control signal with two-lane approaches at each leg at 28 Mile Road & Jewell Road; and
6. Make signal timing adjustments at 29 Mile Road & Van Dyke Avenue.

Based on the results of this study, the following should be required to provide acceptable traffic operations ***with the build-out of the Long-Term Development Scenario:***

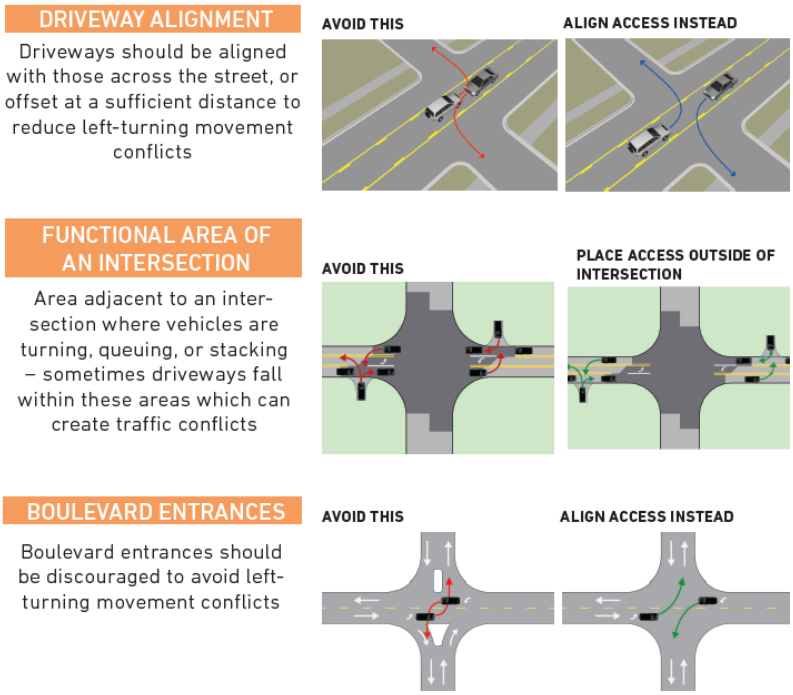
1. Significant capacity improvements are required at 26 Mile Road & Jewell Road. This may include dual eastbound left turn lanes (requiring widening of Jewell Road), dual southbound left turn lanes, or converting 26 Mile Road east of M-53 to a boulevard section;
2. Make signal timing adjustments at Van Dyke Avenue & West Road;
3. Make signal timing adjustments at 27 Mile Road & Van Dyke Avenue;
4. Modernize the traffic control signal at 27 Mile Road & Jewell Road, construct two-lane approaches on the westbound and southbound legs, and construct three-lane approaches on the eastbound and northbound legs
5. Make signal timing adjustments at 28 Mile Road & Van Dyke Avenue;
6. Construct a westbound right turn lane and make signal timing adjustments at 29 Mile Road & Van Dyke Avenue;
7. Install a traffic control signal at 29 Mile Road & Jewell Road with two-lane approaches at each leg; and
8. Widen Jewell Road between 26 Mile Road and 27 Mile Road.

Other Transportation Tools

Beyond the recommended transportation improvements in this study, there are additional tools and techniques that the Township, County, and developers can use to help reduce traffic congestion and improve overall safety. The following includes some considerations that could be made in addition to the previously mentioned recommendations:

Access Management

Access Management involves reducing the number of access points and ensuring well-placed driveways to improve safety and traffic flow. Implementing access management techniques can help prevent vehicle crashes and produce shorter travel times. Boulevard entrances should be avoided, especially when there is a driveway present on the other side of the road as these can create left-turning movement vehicle conflicts. While the intent of these is to create a welcoming landscaped entrance, this can be better accomplished with landscaping on the sides of the street or within a boulevard that is pulled back further from county roads. Additionally, future adjacent developments should be required to connect to one another to help reduce traffic congestion, alleviate unnecessary local trips, and improve overall connectivity throughout the Township.



Road Connections between Developments

Road connections between developments help reduce impacts onto the Mile Roads by allowing some travel by vehicle, bike, or walking without traveling onto the Mile Roads. Additional options to get to a Mile Road may provide a more convenient and direct route which helps reduce traffic along some Mile Road segments. Connections reduce costs for services like mail delivery and school buses. Even though the connections may not be popular with some developers and residents, they offer major benefits to Township safety. Connections improve emergency response times and reduce costs. Studies have shown that communities with connections instead of cul-de-sacs need fewer fire stations and fire fighters to provide improved response times, with savings of up to 50%.

Multimodal Considerations

Pedestrian and bicycle accommodations should be at the very least be encouraged as part of new developments in the Township and implemented during road reconstruction projects. This includes providing safe crossings at signalized and uncontrolled intersections and looking for opportunities to implement mid-block crossings.

Appendix A

Traffic Count Data

Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 2Z4 NE

File Name : TMC_1 29 Mile & Van Dyke_2-5-19
Site Code : TMC_1
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound					29 Mile Road Westbound					Van Dyke Avenue Northbound					29 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	5	51	31	0	87	36	11	24	0	71	6	49	3	0	58	17	12	12	0	41	257
07:15 AM	8	70	42	0	120	31	19	16	0	66	6	49	4	0	59	12	32	9	0	53	298
07:30 AM	6	57	32	0	95	38	13	28	0	79	4	51	3	0	58	17	23	10	0	50	282
07:45 AM	8	34	23	0	65	28	21	24	0	73	12	57	4	0	73	18	22	16	0	56	267
Total	27	212	128	0	367	133	64	92	0	289	28	206	14	0	248	64	89	47	0	200	1104
08:00 AM	11	56	34	0	101	41	30	17	0	88	8	29	4	0	41	18	38	14	0	70	300
08:15 AM	12	62	21	0	95	41	18	13	0	72	7	60	7	0	74	14	8	14	0	36	277
08:30 AM	10	51	13	0	74	43	16	19	0	78	11	50	2	0	63	15	12	24	0	51	266
08:45 AM	15	74	33	0	122	49	15	23	0	87	9	76	8	0	93	15	17	27	0	59	361
Total	48	243	101	0	392	174	79	72	0	325	35	215	21	0	271	62	75	79	0	216	1204
*** BREAK ***																					
04:00 PM	16	82	39	0	137	56	24	19	0	99	14	92	15	0	121	16	26	42	0	84	441
04:15 PM	23	93	30	0	146	42	10	8	0	60	15	122	19	0	156	11	19	22	1	53	415
04:30 PM	21	90	41	1	153	38	16	9	0	63	14	96	12	0	122	11	19	31	2	63	401
04:45 PM	15	76	36	0	127	38	16	10	0	64	22	92	13	0	127	8	19	26	1	54	372
Total	75	341	146	1	563	174	66	46	0	286	65	402	59	0	526	46	83	121	4	254	1629
05:00 PM	25	97	54	1	177	38	25	16	0	79	20	96	22	0	138	6	25	29	0	60	454
05:15 PM	32	93	43	1	169	37	33	12	0	82	30	114	23	0	167	11	29	31	1	72	490
05:30 PM	26	81	37	1	145	36	13	5	0	54	21	91	9	0	121	3	15	34	1	53	373
05:45 PM	30	91	32	0	153	40	17	7	0	64	24	111	19	0	154	4	22	19	0	45	416
Total	113	362	166	3	644	151	88	40	0	279	95	412	73	0	580	24	91	113	2	230	1733
Grand Total	263	1158	541	4	1966	632	297	250	0	1179	223	1235	167	0	1625	196	338	360	6	900	5670
Apprch %	13.4	58.9	27.5	0.2		53.6	25.2	21.2	0		13.7	76	10.3	0		21.8	37.6	40	0.7		
Total %	4.6	20.4	9.5	0.1	34.7	11.1	5.2	4.4	0	20.8	3.9	21.8	2.9	0	28.7	3.5	6	6.3	0.1	15.9	
Pass Cars	254	1138	530	0	1922	610	292	248	0	1150	214	1187	159	0	1560	188	332	351	0	871	5503
% Pass Cars	96.6	98.3	98	0	97.8	96.5	98.3	99.2	0	97.5	96	96.1	95.2	0	96	95.9	98.2	97.5	0	96.8	97.1
Single Units	6	13	11	0	30	22	5	2	0	29	6	34	4	0	44	5	6	7	0	18	121
% Single Units	2.3	1.1	2	0	1.5	3.5	1.7	0.8	0	2.5	2.7	2.8	2.4	0	2.7	2.6	1.8	1.9	0	2	2.1
Heavy Trucks	3	7	0	0	10	0	0	0	0	0	3	14	4	0	21	3	0	2	0	5	36
% Heavy Trucks	1.1	0.6	0	0	0.5	0	0	0	0	0	1.3	1.1	2.4	0	1.3	1.5	0	0.6	0	0.6	0.6
Peds	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6	10
% Peds	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.7	0.2

TDC Traffic Comments: Signalized intersection with push button ped. signals for west & north legs for .. Macomb Apple Orchard Trail crossings. Video VCU camera was located within NE intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

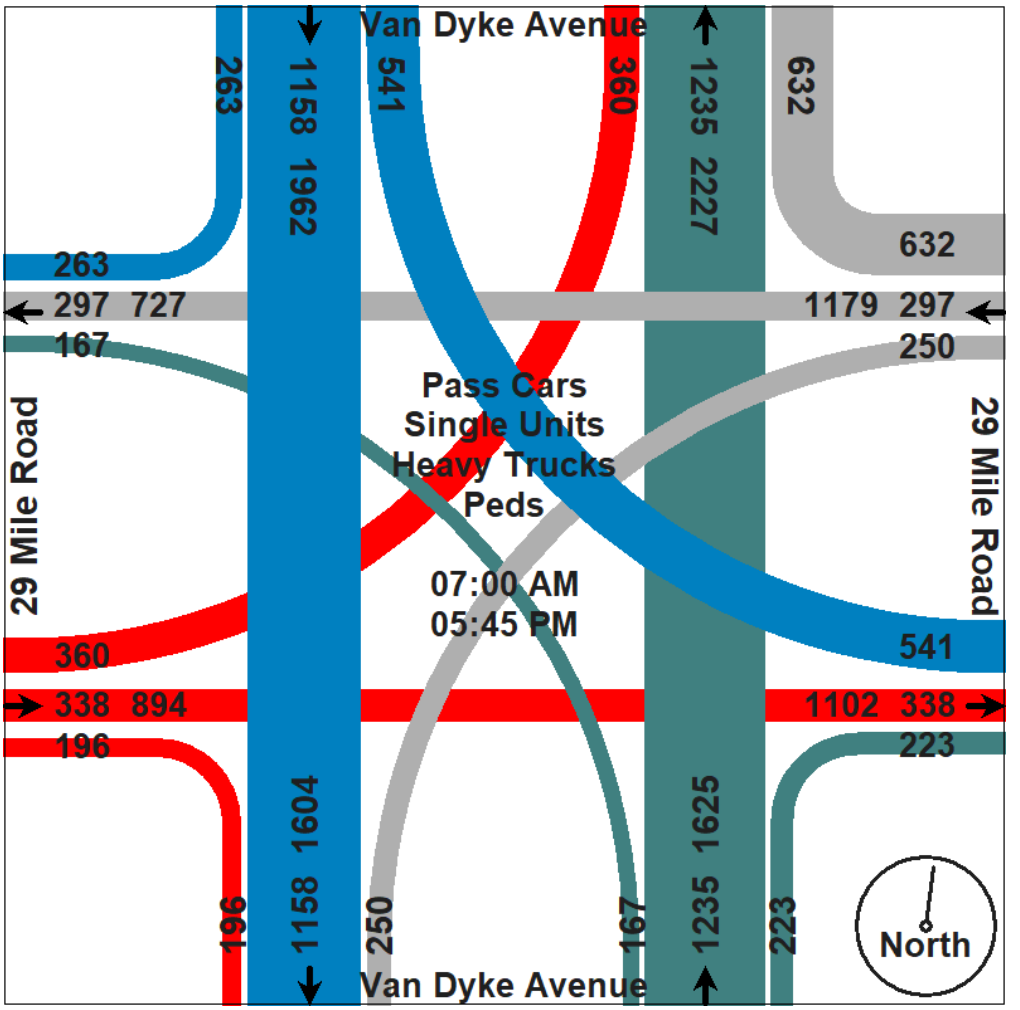
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 2Z4 NE

File Name : TMC_1 29 Mile & Van Dyke_2-5-19
Site Code : TMC_1
Start Date : 2/5/2019
Page No : 2



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

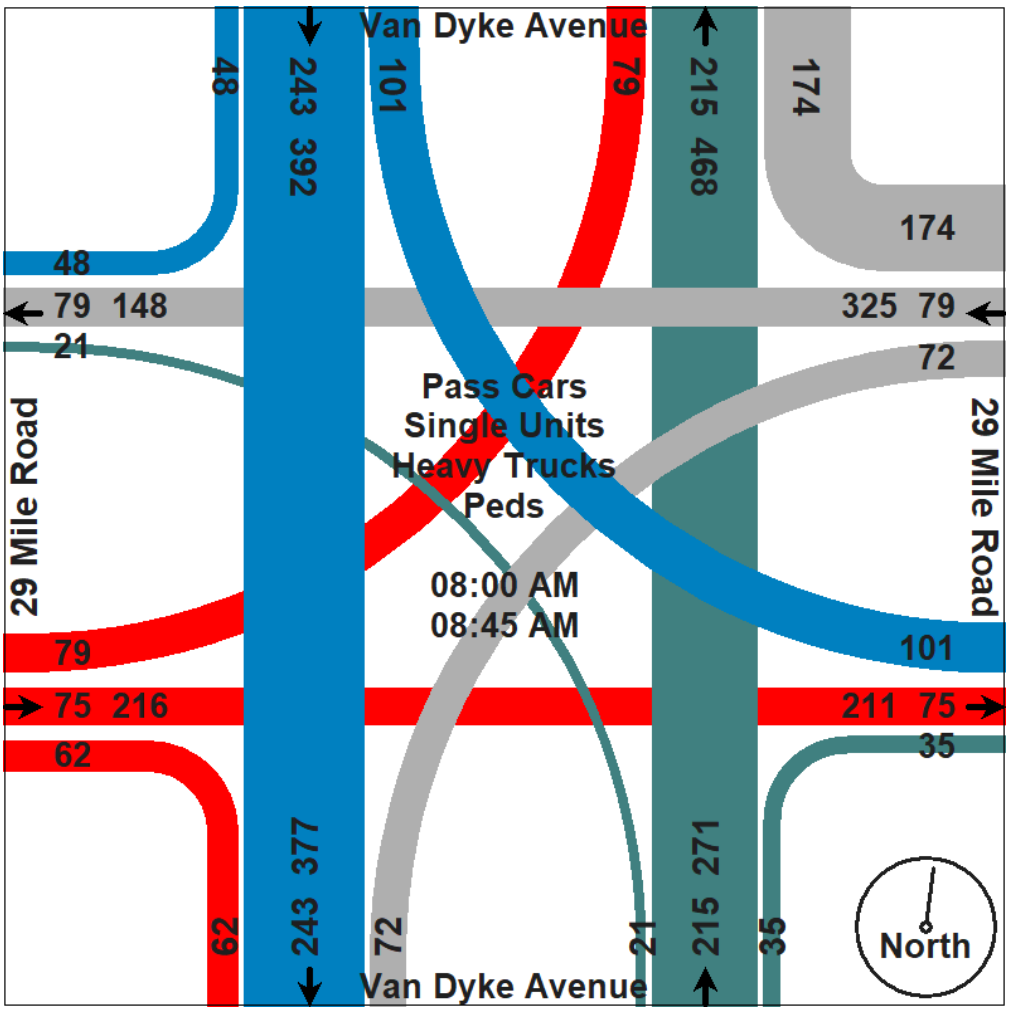
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 2Z4 NE

File Name : TMC_1 29 Mile & Van Dyke_2-5-19
Site Code : TMC_1
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound				29 Mile Road Westbound				Van Dyke Avenue Northbound				29 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	11	56	**34**	101	41	**30**	17	**88**	8	29	4	41	**18**	**38**	14	**70**	300
08:15 AM	12	62	21	95	41	18	13	72	7	60	7	74	14	8	14	36	277
08:30 AM	10	51	13	74	43	16	19	78	**11**	50	2	63	15	12	24	51	266
08:45 AM	**15**	**74**	33	**122**	**49**	15	**23**	87	9	**76**	**8**	**93**	15	17	**27**	59	**361**
Total Volume	48	243	101	392	174	79	72	325	35	215	21	271	62	75	79	216	1204
% App. Total	12.2	62	25.8		53.5	24.3	22.2		12.9	79.3	7.7		28.7	34.7	36.6		
PHF	.800	.821	.743	.803	.888	.658	.783	.923	.795	.707	.656	.728	.861	.493	.731	.771	.834
Pass Cars	44	232	99	375	165	77	71	313	31	197	18	246	62	72	73	207	1141
% Pass Cars	91.7	95.5	98.0	95.7	94.8	97.5	98.6	96.3	88.6	91.6	85.7	90.8	100	96.0	92.4	95.8	94.8
Single Units	2	6	2	10	9	2	1	12	2	14	2	18	0	3	4	7	47
% Single Units	4.2	2.5	2.0	2.6	5.2	2.5	1.4	3.7	5.7	6.5	9.5	6.6	0	4.0	5.1	3.2	3.9
Heavy Trucks	2	5	0	7	0	0	0	0	2	4	1	7	0	0	2	2	16
% Heavy Trucks	4.2	2.1	0	1.8	0	0	0	0	5.7	1.9	4.8	2.6	0	0	2.5	0.9	1.3
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

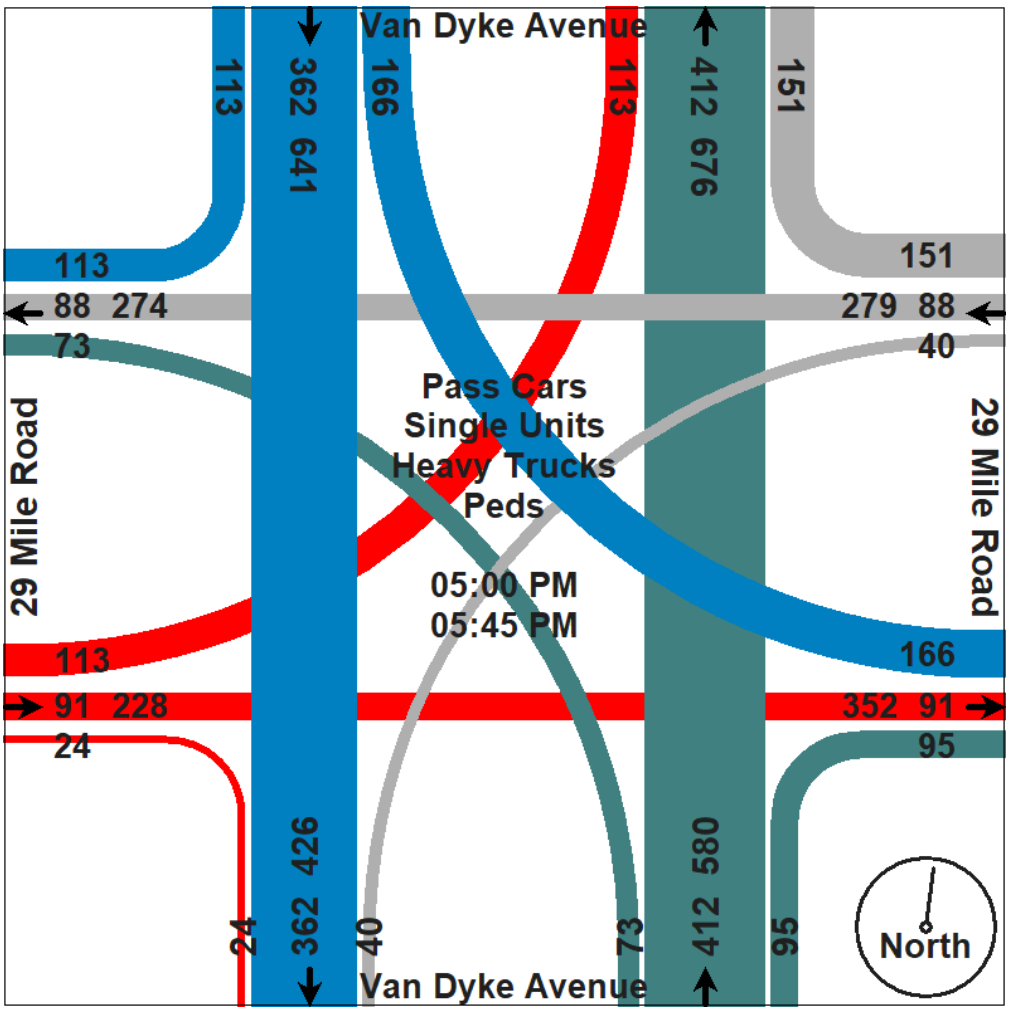
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 2Z4 NE

File Name : TMC_1 29 Mile & Van Dyke_2-5-19
Site Code : TMC_1
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound				29 Mile Road Westbound				Van Dyke Avenue Northbound				29 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	25	**97**	**54**	**176**	38	25	**16**	79	20	96	22	138	6	25	29	60	453
05:15 PM	**32**	93	43	168	37	**33**	12	**82**	**30**	**114**	**23**	**167**	**11**	**29**	31	**71**	**488**
05:30 PM	26	81	37	144	36	13	5	54	21	91	9	121	3	15	**34**	52	371
05:45 PM	30	91	32	153	**40**	17	7	64	24	111	19	154	4	22	19	45	416
Total Volume	113	362	166	641	151	88	40	279	95	412	73	580	24	91	113	228	1728
% App. Total	17.6	56.5	25.9		54.1	31.5	14.3		16.4	71	12.6		10.5	39.9	49.6		
PHF	.883	.933	.769	.911	.944	.667	.625	.851	.792	.904	.793	.868	.545	.784	.831	.803	.885
Pass Cars	112	361	165	638	150	88	39	277	94	407	72	573	23	90	113	226	1714
% Pass Cars	99.1	99.7	99.4	99.5	99.3	100	97.5	99.3	98.9	98.8	98.6	98.8	95.8	98.9	100	99.1	99.2
Single Units	1	1	1	3	1	0	1	2	0	4	1	5	1	1	0	2	12
% Single Units	0.9	0.3	0.6	0.5	0.7	0	2.5	0.7	0	1.0	1.4	0.9	4.2	1.1	0	0.9	0.7
Heavy Trucks	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
% Heavy Trucks	0	0	0	0	0	0	0	0	1.1	0.2	0	0.3	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3FX SW

File Name : TMC_2 29 Mile & Jewell_2-5-19
Site Code : TMC_2
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	29 Mile Road Westbound				Jewell Rd. Northbound				29 Mile Road Eastbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	57	14	0	71	4	7	0	11	26	20	0	46	128
07:15 AM	54	15	0	69	5	16	1	22	45	28	0	73	164
07:30 AM	58	10	0	68	8	14	0	22	18	37	0	55	145
07:45 AM	67	15	0	82	9	18	0	27	22	30	0	52	161
Total	236	54	0	290	26	55	1	82	111	115	0	226	598
08:00 AM	45	17	0	62	14	38	0	52	54	26	0	80	194
08:15 AM	53	5	0	58	10	17	0	27	8	27	0	35	120
08:30 AM	57	8	0	65	7	15	0	22	7	26	0	33	120
08:45 AM	87	30	0	117	34	9	0	43	9	45	0	54	214
Total	242	60	0	302	65	79	0	144	78	124	0	202	648
*** BREAK ***													
04:00 PM	84	21	0	105	15	14	0	29	18	65	0	83	217
04:15 PM	47	4	0	51	13	14	0	27	12	51	0	63	141
04:30 PM	40	9	0	49	13	14	0	27	14	59	0	73	149
04:45 PM	38	7	0	45	15	20	0	35	12	70	0	82	162
Total	209	41	0	250	56	62	0	118	56	245	0	301	669
05:00 PM	59	9	0	68	19	24	0	43	17	83	0	100	211
05:15 PM	58	9	0	67	27	26	0	53	25	68	0	93	213
05:30 PM	36	8	0	44	15	12	0	27	14	63	0	77	148
05:45 PM	41	5	0	46	21	17	0	38	10	71	0	81	165
Total	194	31	0	225	82	79	0	161	66	285	0	351	737
Grand Total	881	186	0	1067	229	275	1	505	311	769	0	1080	2652
Apprch %	82.6	17.4	0		45.3	54.5	0.2		28.8	71.2	0		
Total %	33.2	7	0	40.2	8.6	10.4	0	19	11.7	29	0	40.7	
Pass Cars	860	175	0	1035	219	269	0	488	303	750	0	1053	2576
% Pass Cars	97.6	94.1	0	97	95.6	97.8	0	96.6	97.4	97.5	0	97.5	97.1
Single Units	21	10	0	31	10	6	0	16	8	17	0	25	72
% Single Units	2.4	5.4	0	2.9	4.4	2.2	0	3.2	2.6	2.2	0	2.3	2.7
Heavy Trucks	0	1	0	1	0	0	0	0	0	2	0	2	3
% Heavy Trucks	0	0.5	0	0.1	0	0	0	0	0	0.3	0	0.2	0.1
Peds	0	0	0	0	0	0	1	1	0	0	0	0	1
% Peds	0	0	0	0	0	0	100	0.2	0	0	0	0	0

TDC Traffic Comments: Non-signalized "T" intersection, NB Jewell Road is stop controlled for 29 Mile Road. Video VCU camera was located within SW intersection quadrant. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

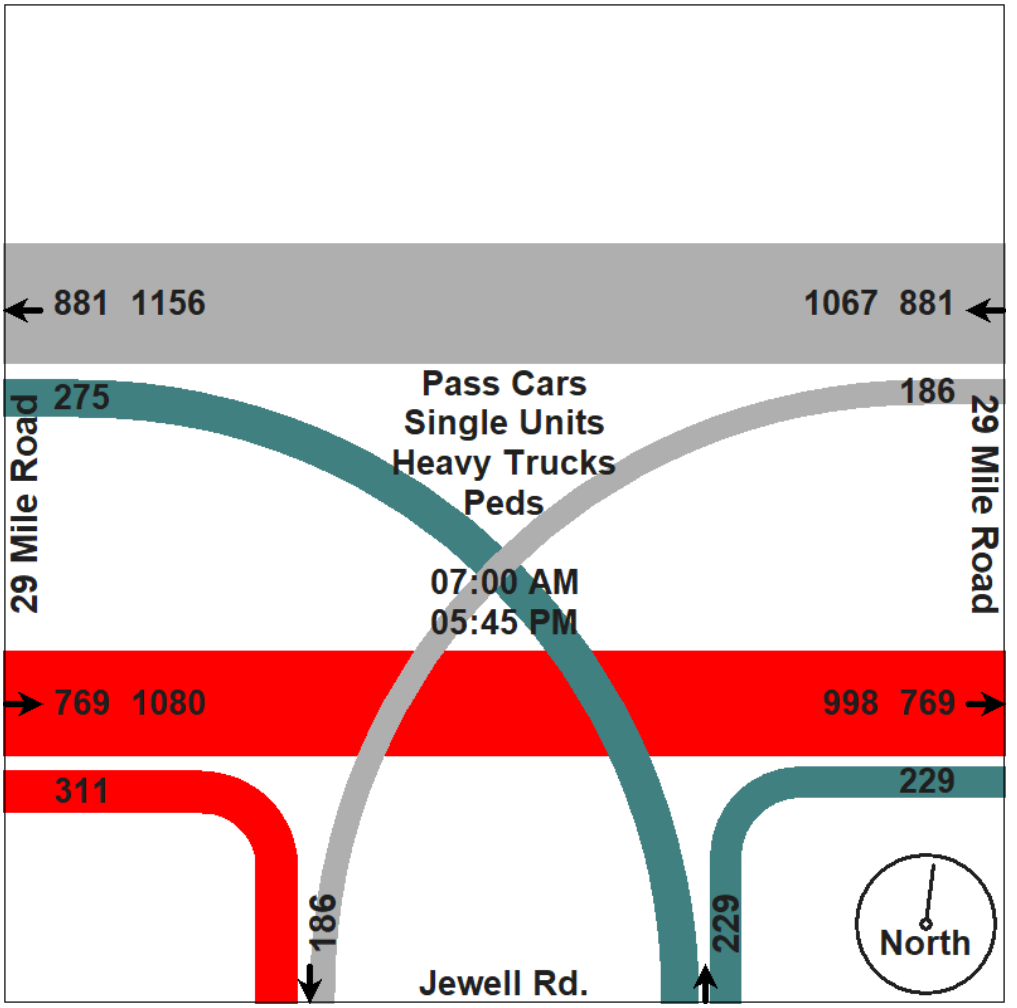
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3FX SW

File Name : TMC_2 29 Mile & Jewell_2-5-19
Site Code : TMC_2
Start Date : 2/5/2019
Page No : 2



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Phone: 586.786-5407

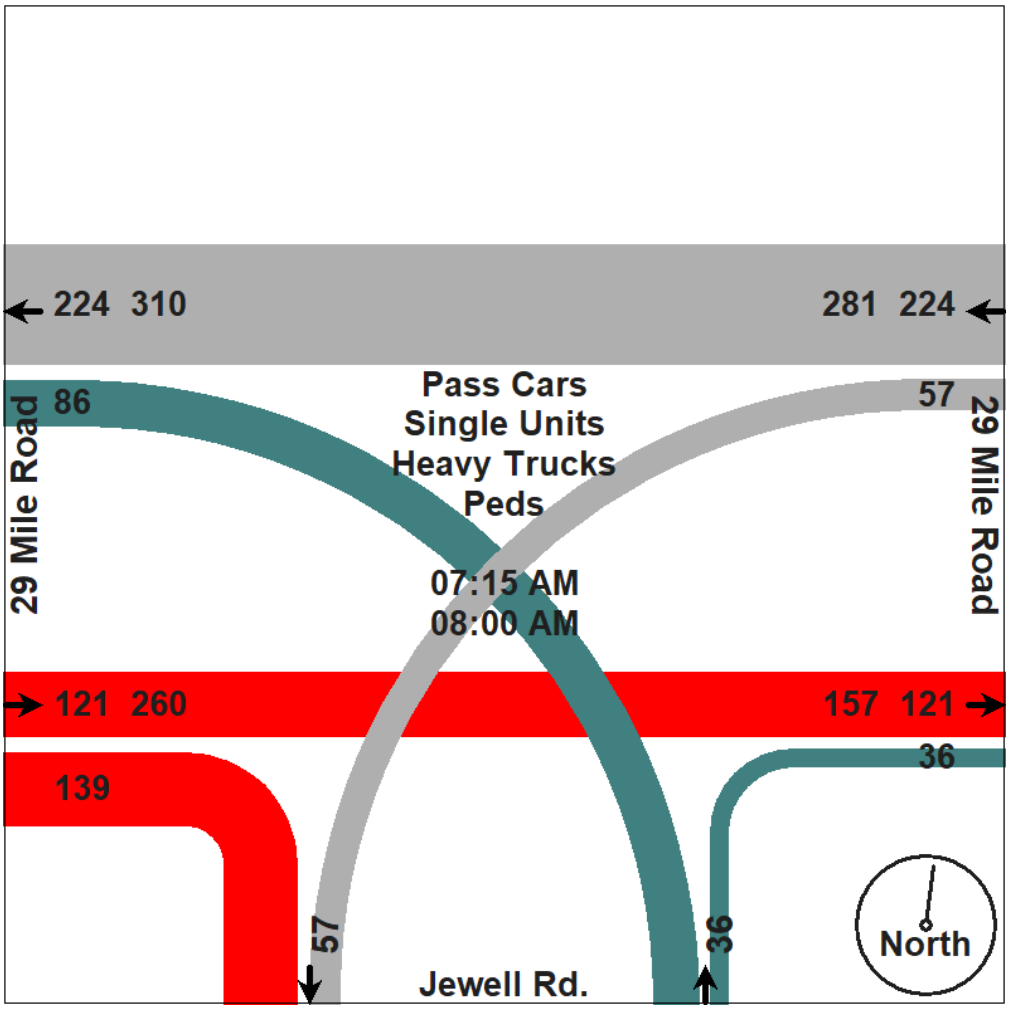
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3FX SW

File Name : TMC_2 29 Mile & Jewell_2-5-19
Site Code : TMC_2
Start Date : 2/5/2019
Page No : 3

	29 Mile Road Westbound			Jewell Rd. Northbound			29 Mile Road Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	54	15	69	5	16	21	45	28	73	163
07:30 AM	58	10	68	8	14	22	18	**37**	55	145
07:45 AM	**67**	15	**82**	9	18	27	22	30	52	161
08:00 AM	45	**17**	62	**14**	**38**	**52**	**54**	26	**80**	**194**
Total Volume	224	57	281	36	86	122	139	121	260	663
% App. Total	79.7	20.3		29.5	70.5		53.5	46.5		
PHF	.836	.838	.857	.643	.566	.587	.644	.818	.813	.854
Pass Cars	223	55	278	33	85	118	134	117	251	647
% Pass Cars	99.6	96.5	98.9	91.7	98.8	96.7	96.4	96.7	96.5	97.6
Single Units	1	2	3	3	1	4	5	4	9	16
% Single Units	0.4	3.5	1.1	8.3	1.2	3.3	3.6	3.3	3.5	2.4
Heavy Trucks	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0



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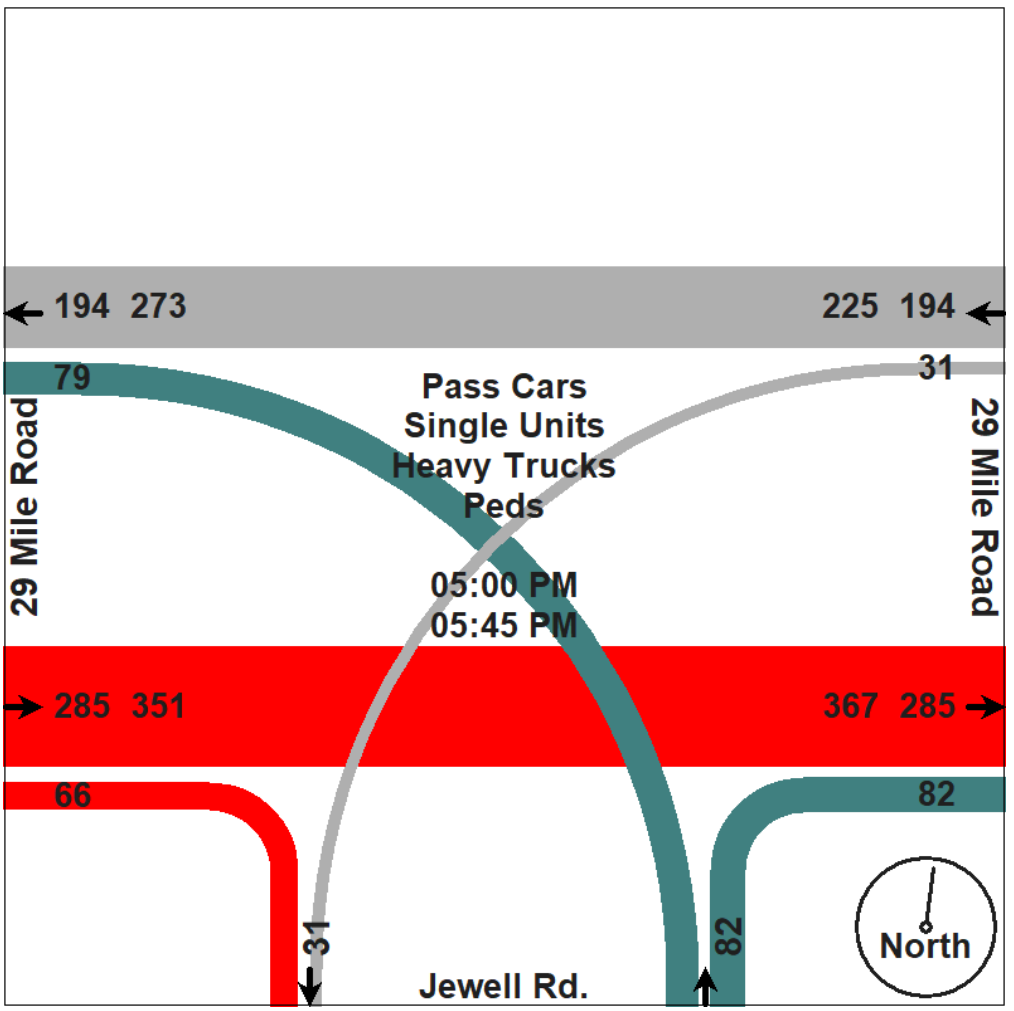
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3FX SW

File Name : TMC_2 29 Mile & Jewell_2-5-19
Site Code : TMC_2
Start Date : 2/5/2019
Page No : 4

	29 Mile Road Westbound			Jewell Rd. Northbound			29 Mile Road Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**59**	**9**	**68**	19	24	43	17	**83**	**100**	211
05:15 PM	58	9	67	**27**	**26**	**53**	**25**	68	93	**213**
05:30 PM	36	8	44	15	12	27	14	63	77	148
05:45 PM	41	5	46	21	17	38	10	71	81	165
Total Volume	194	31	225	82	79	161	66	285	351	737
% App. Total	86.2	13.8		50.9	49.1		18.8	81.2		
PHF	.822	.861	.827	.759	.760	.759	.660	.858	.878	.865
Pass Cars	192	31	223	82	79	161	66	283	349	733
% Pass Cars	99.0	100	99.1	100	100	100	100	99.3	99.4	99.5
Single Units	2	0	2	0	0	0	0	2	2	4
% Single Units	1.0	0	0.9	0	0	0	0	0.7	0.6	0.5
Heavy Trucks	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4SY NE

File Name : TMC_3 28 Mile & Van Dyke_2-5-19
Site Code : TMC_3
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound					28 Mile Road Westbound					Van Dyke Avenue Northbound					28 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	89	3	0	98	5	3	8	0	16	11	47	13	0	71	97	14	10	0	121	306
07:15 AM	6	79	7	0	92	2	7	16	0	25	3	52	17	0	72	79	19	11	0	109	298
07:30 AM	9	82	7	0	98	5	10	10	0	25	4	51	9	0	64	83	20	11	0	114	301
07:45 AM	5	74	0	0	79	4	12	7	0	23	5	53	20	0	78	66	22	14	0	102	282
Total	26	324	17	0	367	16	32	41	0	89	23	203	59	0	285	325	75	46	0	446	1187
08:00 AM	5	81	3	0	89	2	15	16	0	33	5	37	14	0	56	77	28	10	0	115	293
08:15 AM	5	74	2	0	81	4	3	12	0	19	3	56	19	0	78	79	11	9	0	99	277
08:30 AM	3	82	3	0	88	4	10	6	0	20	3	49	12	0	64	73	16	14	0	103	275
08:45 AM	12	94	6	0	112	5	4	5	0	14	3	78	18	0	99	60	9	16	1	86	311
Total	25	331	14	0	370	15	32	39	0	86	14	220	63	0	297	289	64	49	1	403	1156
*** BREAK ***																					
04:00 PM	11	105	6	0	122	5	8	1	0	14	4	119	55	0	178	18	12	12	0	42	356
04:15 PM	19	81	5	0	105	2	7	7	0	16	8	124	62	0	194	32	11	12	1	56	371
04:30 PM	13	88	7	0	108	2	8	5	0	15	5	104	64	0	173	24	13	17	3	57	353
04:45 PM	17	77	5	0	99	3	15	7	0	25	6	118	71	0	195	34	9	13	2	58	377
Total	60	351	23	0	434	12	38	20	0	70	23	465	252	0	740	108	45	54	6	213	1457
05:00 PM	15	100	7	0	122	9	6	5	0	20	14	119	67	0	200	28	9	15	0	52	394
05:15 PM	19	83	8	0	110	4	17	2	0	23	12	128	62	0	202	35	16	21	1	73	408
05:30 PM	16	71	10	0	97	2	11	5	0	18	12	97	66	0	175	29	11	18	0	58	348
05:45 PM	15	77	8	0	100	5	10	6	0	21	6	124	72	0	202	29	13	16	0	58	381
Total	65	331	33	0	429	20	44	18	0	82	44	468	267	0	779	121	49	70	1	241	1531
Grand Total	176	1337	87	0	1600	63	146	118	0	327	104	1356	641	0	2101	843	233	219	8	1303	5331
Apprch %	11	83.6	5.4	0		19.3	44.6	36.1	0		5	64.5	30.5	0		64.7	17.9	16.8	0.6		
Total %	3.3	25.1	1.6	0	30	1.2	2.7	2.2	0	6.1	2	25.4	12	0	39.4	15.8	4.4	4.1	0.2	24.4	
Pass Cars	173	1307	84	0	1564	60	145	116	0	321	101	1302	633	0	2036	828	228	213	0	1269	5190
% Pass Cars	98.3	97.8	96.6	0	97.8	95.2	99.3	98.3	0	98.2	97.1	96	98.8	0	96.9	98.2	97.9	97.3	0	97.4	97.4
Single Units	3	18	3	0	24	3	1	2	0	6	2	37	5	0	44	8	4	5	0	17	91
% Single Units	1.7	1.3	3.4	0	1.5	4.8	0.7	1.7	0	1.8	1.9	2.7	0.8	0	2.1	0.9	1.7	2.3	0	1.3	1.7
Heavy Trucks	0	12	0	0	12	0	0	0	0	0	1	17	3	0	21	7	1	1	0	9	42
% Heavy Trucks	0	0.9	0	0	0.8	0	0	0	0	0	1	1.3	0.5	0	1	0.8	0.4	0.5	0	0.7	0.8
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	8
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.6	0.2

TDC Traffic Comments: Signalized skewed intersection with ped. signals for all quadrants. Macomb Apple Orchard Trail located on west leg. Push buttons for north & south legs. Video VCU camera was located within NE intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

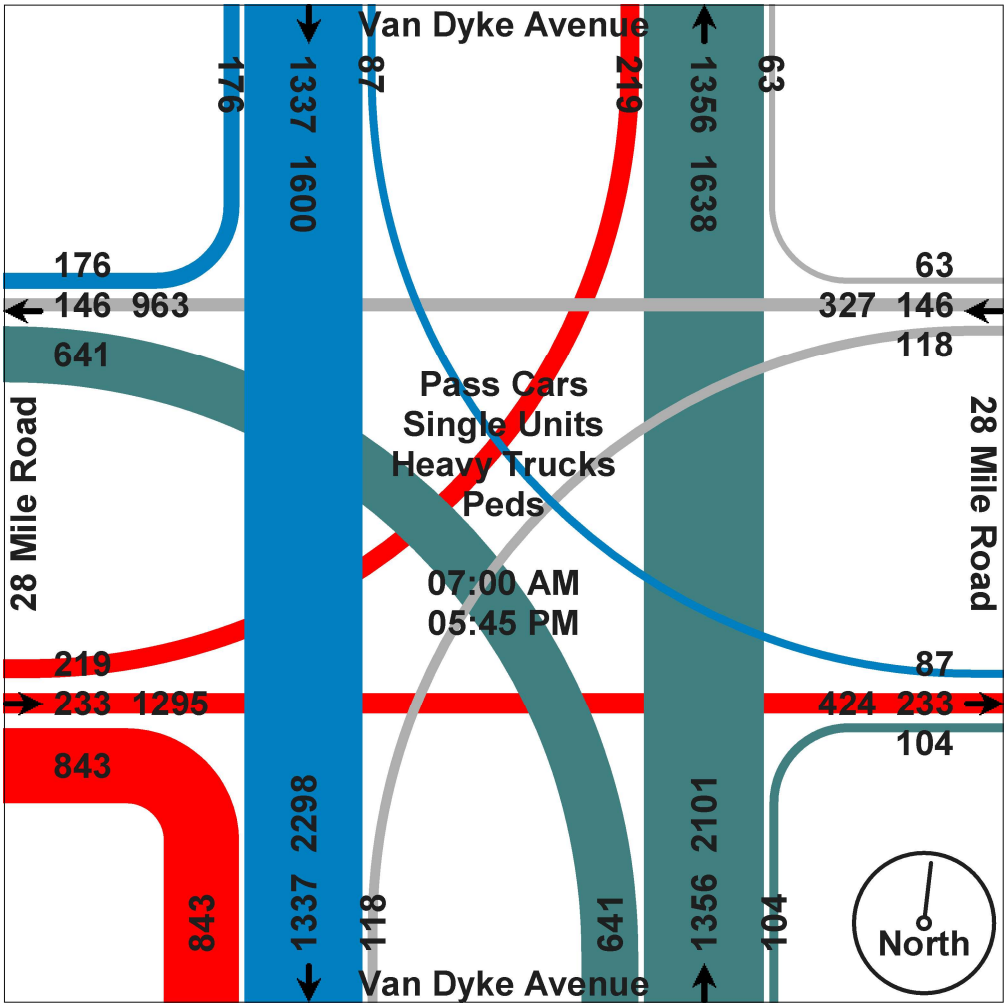
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4SY NE

File Name : TMC_3 28 Mile & Van Dyke_2-5-19
Site Code : TMC_3
Start Date : 2/5/2019
Page No : 2



Traffic Data Collection, LLC

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Phone: 586.786-5407

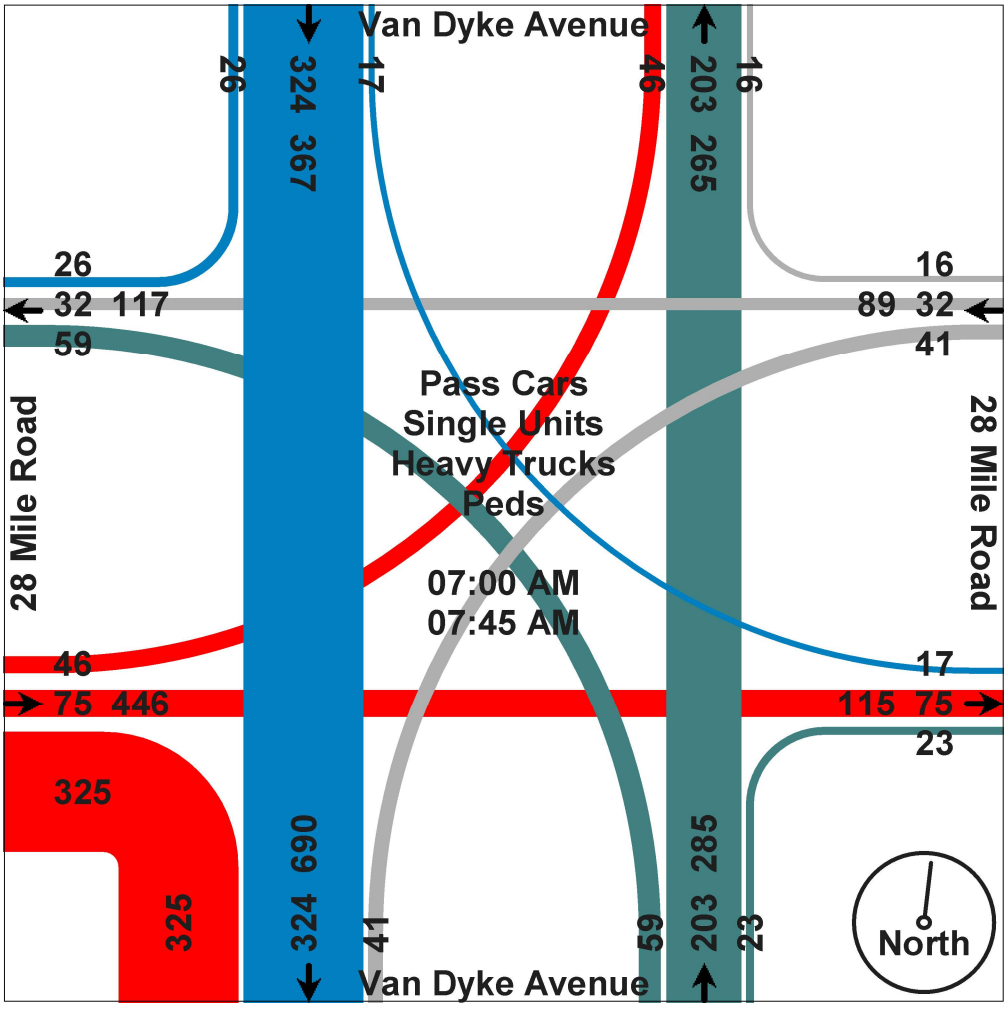
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4SY NE

File Name : TMC_3 28 Mile & Van Dyke_2-5-19
Site Code : TMC_3
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound				28 Mile Road Westbound				Van Dyke Avenue Northbound				28 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	6	**89**	3	**98**	**5**	3	8	16	**11**	47	13	71	**97**	14	10	**121**	**306**
07:15 AM	6	79	**7**	92	2	7	**16**	**25**	3	52	17	72	79	19	11	109	298
07:30 AM	**9**	82	7	98	5	10	10	25	4	51	9	64	83	20	11	114	301
07:45 AM	5	74	0	79	4	**12**	7	23	5	**53**	**20**	**78**	66	**22**	**14**	102	282
Total Volume	26	324	17	367	16	32	41	89	23	203	59	285	325	75	46	446	1187
% App. Total	7.1	88.3	4.6		18	36	46.1		8.1	71.2	20.7		72.9	16.8	10.3		
PHF	.722	.910	.607	.936	.800	.667	.641	.890	.523	.958	.738	.913	.838	.852	.821	.921	.970
Pass Cars	26	313	17	356	16	32	41	89	22	186	55	263	325	75	45	445	1153
% Pass Cars	100	96.6	100	97.0	100	100	100	100	95.7	91.6	93.2	92.3	100	100	97.8	99.8	97.1
Single Units	0	7	0	7	0	0	0	0	1	9	1	11	0	0	1	1	19
% Single Units	0	2.2	0	1.9	0	0	0	0	4.3	4.4	1.7	3.9	0	0	2.2	0.2	1.6
Heavy Trucks	0	4	0	4	0	0	0	0	0	8	3	11	0	0	0	0	15
% Heavy Trucks	0	1.2	0	1.1	0	0	0	0	0	3.9	5.1	3.9	0	0	0	0	1.3
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

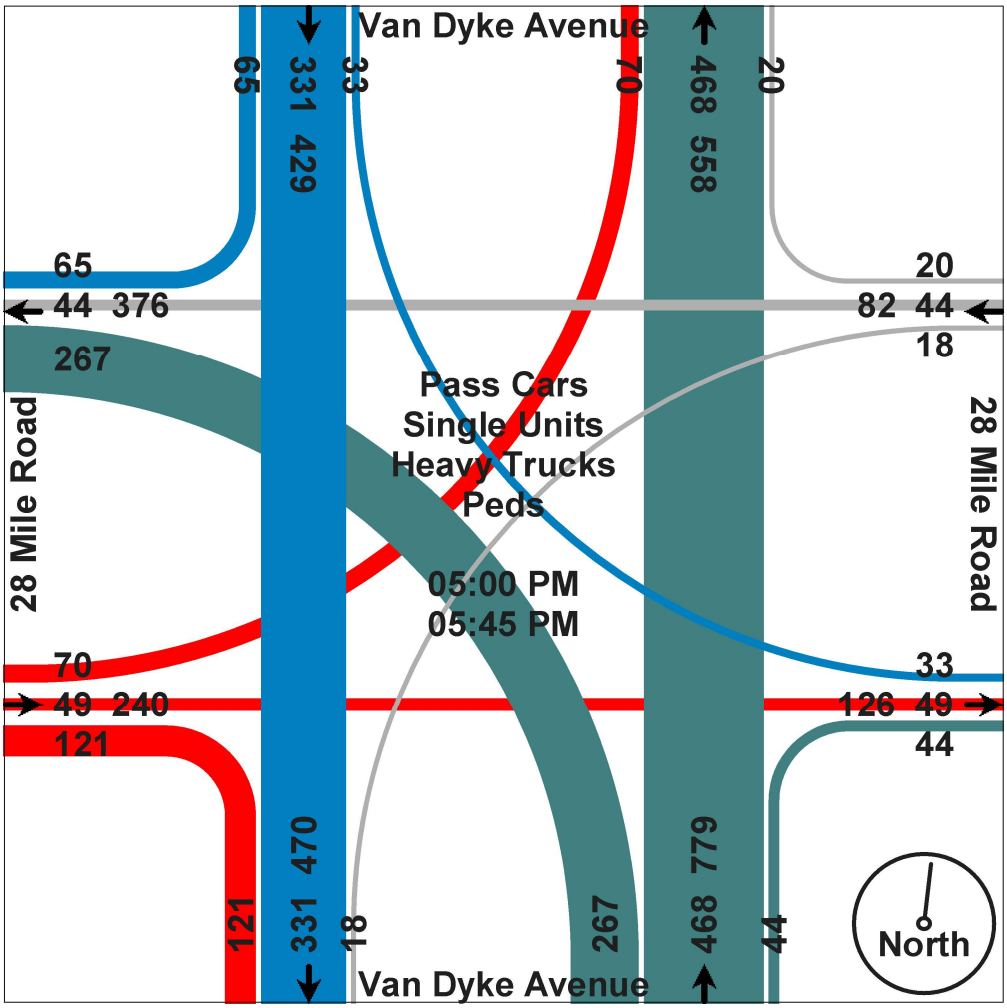
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4SY NE

File Name : TMC_3 28 Mile & Van Dyke_2-5-19
Site Code : TMC_3
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound				28 Mile Road Westbound				Van Dyke Avenue Northbound				28 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	15	**100**	7	**122**	**9**	6	5	20	**14**	119	67	200	28	9	15	52	394
05:15 PM	**19**	83	8	110	4	**17**	2	**23**	12	**128**	62	**202**	**35**	**16**	**21**	**72**	**407**
05:30 PM	16	71	**10**	97	2	11	5	18	12	97	66	175	29	11	18	58	348
05:45 PM	15	77	8	100	5	10	**6**	21	6	124	**72**	202	29	13	16	58	381
Total Volume	65	331	33	429	20	44	18	82	44	468	267	779	121	49	70	240	1530
% App. Total	15.2	77.2	7.7		24.4	53.7	22		5.6	60.1	34.3		50.4	20.4	29.2		
PHF	.855	.828	.825	.879	.556	.647	.750	.891	.786	.914	.927	.964	.864	.766	.833	.833	.940
Pass Cars	64	327	33	424	20	44	17	81	44	466	266	776	118	49	69	236	1517
% Pass Cars	98.5	98.8	100	98.8	100	100	94.4	98.8	100	99.6	99.6	99.6	97.5	100	98.6	98.3	99.2
Single Units	1	3	0	4	0	0	1	1	0	2	1	3	3	0	1	4	12
% Single Units	1.5	0.9	0	0.9	0	0	5.6	1.2	0	0.4	0.4	0.4	2.5	0	1.4	1.7	0.8
Heavy Trucks	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Heavy Trucks	0	0.3	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 6H3 SE

File Name : TMC_4 28 Mile & Jewell_2-5-19
Site Code : TMC_4
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Jewell Road Southbound					28 Mile Road Westbound					Jewell Road Northbound					28 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	14	0	0	21	1	4	5	0	10	1	27	9	0	37	15	2	10	0	27	95
07:15 AM	14	27	0	0	41	1	8	1	0	10	0	27	5	0	32	18	1	11	0	30	113
07:30 AM	10	19	1	0	30	3	7	4	0	14	0	13	8	0	21	25	2	8	0	35	100
07:45 AM	11	17	0	0	28	2	5	3	0	10	0	40	7	0	47	9	2	13	0	24	109
Total	42	77	1	0	120	7	24	13	0	44	1	107	29	0	137	67	7	42	0	116	417
08:00 AM	27	59	3	0	89	7	6	3	0	16	1	50	2	0	53	14	2	22	0	38	196
08:15 AM	6	21	1	0	28	0	8	2	0	10	1	20	5	0	26	11	2	1	0	14	78
08:30 AM	3	14	2	0	19	1	5	2	0	8	2	19	9	0	30	13	5	3	0	21	78
08:45 AM	1	24	2	0	27	1	4	1	0	6	1	34	5	0	40	11	2	2	0	15	88
Total	37	118	8	0	163	9	23	8	0	40	5	123	21	0	149	49	11	28	0	88	440
*** BREAK ***																					
04:00 PM	2	29	3	0	34	1	3	3	0	7	3	21	8	0	32	10	9	2	0	21	94
04:15 PM	4	17	1	0	22	0	3	0	0	3	4	24	4	0	32	13	4	6	0	23	80
04:30 PM	4	28	0	0	32	2	2	4	0	8	4	21	11	0	36	11	9	6	0	26	102
04:45 PM	5	17	1	0	23	1	5	1	0	7	1	26	13	0	40	9	10	2	0	21	91
Total	15	91	5	0	111	4	13	8	0	25	12	92	36	0	140	43	32	16	0	91	367
05:00 PM	1	22	1	0	24	3	4	3	0	10	8	35	16	0	59	15	6	7	0	28	121
05:15 PM	8	19	3	0	30	2	5	0	0	7	9	45	12	0	66	16	6	13	0	35	138
05:30 PM	3	30	1	0	34	0	6	2	0	8	4	31	8	0	43	22	10	3	0	35	120
05:45 PM	0	14	2	0	16	0	9	3	0	12	4	30	9	0	43	15	5	4	0	24	95
Total	12	85	7	0	104	5	24	8	0	37	25	141	45	0	211	68	27	27	0	122	474
Grand Total	106	371	21	0	498	25	84	37	0	146	43	463	131	0	637	227	77	113	0	417	1698
Apprch %	21.3	74.5	4.2	0		17.1	57.5	25.3	0		6.8	72.7	20.6	0		54.4	18.5	27.1	0		
Total %	6.2	21.8	1.2	0	29.3	1.5	4.9	2.2	0	8.6	2.5	27.3	7.7	0	37.5	13.4	4.5	6.7	0	24.6	
Pass Cars	105	356	16	0	477	23	81	37	0	141	41	450	130	0	621	221	76	110	0	407	1646
% Pass Cars	99.1	96	76.2	0	95.8	92	96.4	100	0	96.6	95.3	97.2	99.2	0	97.5	97.4	98.7	97.3	0	97.6	96.9
Single Units	1	15	5	0	21	2	3	0	0	5	2	13	1	0	16	4	1	3	0	8	50
% Single Units	0.9	4	23.8	0	4.2	8	3.6	0	0	3.4	4.7	2.8	0.8	0	2.5	1.8	1.3	2.7	0	1.9	2.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0	0	0	0.5	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TDC Traffic Comments: Non-signalized, all-way stop controlled intersection. Video VCU camera was located within SE intersection quadrant. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

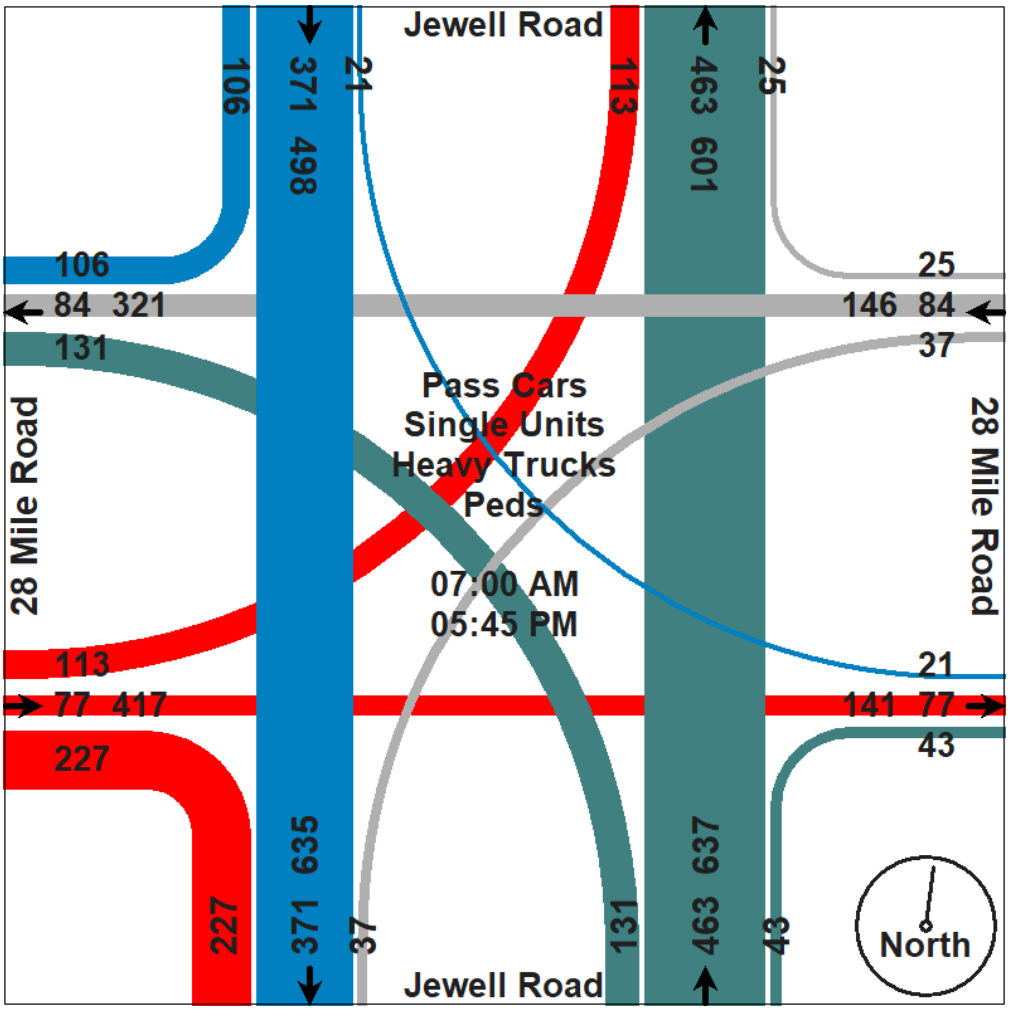
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 6H3 SE

File Name : TMC_4 28 Mile & Jewell_2-5-19
Site Code : TMC_4
Start Date : 2/5/2019
Page No : 2



Traffic Data Collection, LLC

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Phone: 586.786-5407

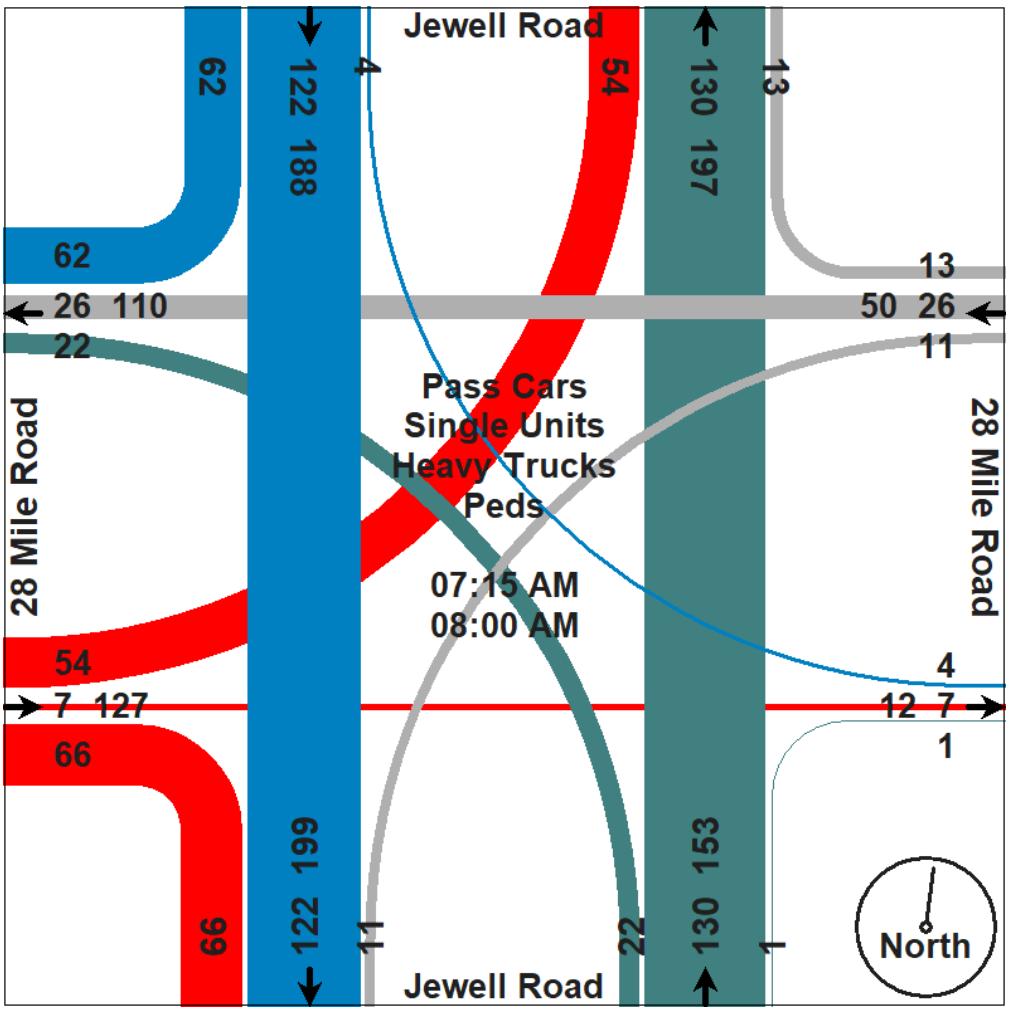
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 6H3 SE

File Name : TMC_4 28 Mile & Jewell_2-5-19
Site Code : TMC_4
Start Date : 2/5/2019
Page No : 3

	Jewell Road Southbound				28 Mile Road Westbound				Jewell Road Northbound				28 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	14	27	0	41	1	**8**	1	10	0	27	5	32	18	1	11	30	113
07:30 AM	10	19	1	30	3	7	**4**	14	0	13	**8**	21	**25**	**2**	8	35	100
07:45 AM	11	17	0	28	2	5	3	10	0	40	7	47	9	2	13	24	109
08:00 AM	**27**	**59**	**3**	**89**	**7**	6	3	**16**	**1**	**50**	2	**53**	14	2	**22**	**38**	**196**
Total Volume	62	122	4	188	13	26	11	50	1	130	22	153	66	7	54	127	518
% App. Total	33	64.9	2.1		26	52	22		0.7	85	14.4		52	5.5	42.5		
PHF	.574	.517	.333	.528	.464	.813	.688	.781	.250	.650	.688	.722	.660	.875	.614	.836	.661
Pass Cars	62	117	3	182	11	26	11	48	1	126	22	149	66	7	51	124	503
% Pass Cars	100	95.9	75.0	96.8	84.6	100	100	96.0	100	96.9	100	97.4	100	100	94.4	97.6	97.1
Single Units	0	5	1	6	2	0	0	2	0	4	0	4	0	0	3	3	15
% Single Units	0	4.1	25.0	3.2	15.4	0	0	4.0	0	3.1	0	2.6	0	0	5.6	2.4	2.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

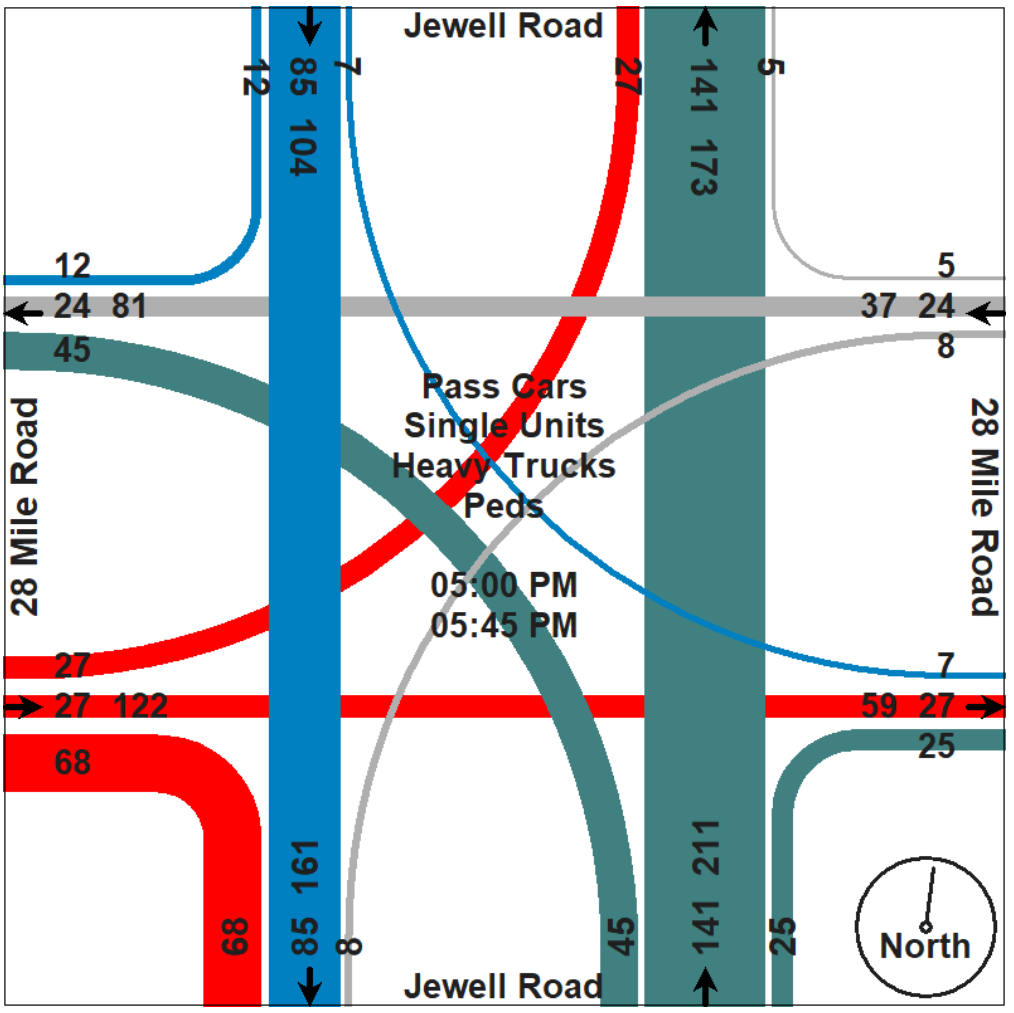
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 6H3 SE

File Name : TMC_4 28 Mile & Jewell_2-5-19
Site Code : TMC_4
Start Date : 2/5/2019
Page No : 4

	Jewell Road Southbound				28 Mile Road Westbound				Jewell Road Northbound				28 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	22	1	24	**3**	4	**3**	10	8	35	**16**	59	15	6	7	28	121
05:15 PM	**8**	19	**3**	30	2	5	0	7	**9**	**45**	12	**66**	16	6	**13**	**35**	**138**
05:30 PM	3	**30**	1	**34**	0	6	2	8	4	31	8	43	**22**	**10**	3	35	120
05:45 PM	0	14	2	16	0	**9**	3	**12**	4	30	9	43	15	5	4	24	95
Total Volume	12	85	7	104	5	24	8	37	25	141	45	211	68	27	27	122	474
% App. Total	11.5	81.7	6.7		13.5	64.9	21.6		11.8	66.8	21.3		55.7	22.1	22.1		
PHF	.375	.708	.583	.765	.417	.667	.667	.771	.694	.783	.703	.799	.773	.675	.519	.871	.859
Pass Cars	12	85	7	104	5	23	8	36	25	141	45	211	68	27	27	122	473
% Pass Cars	100	100	100	100	100	95.8	100	97.3	100	100	100	100	100	100	100	100	99.8
Single Units	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
% Single Units	0	0	0	0	0	4.2	0	2.7	0	0	0	0	0	0	0	0	0.2
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 24L SW

File Name : TMC_5 Van Dyke & Campground_2-5-19
Site Code : TMC_5
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound				Van Dyke Avenue Northbound				Campground Road Eastbound				
Start Time	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Int. Total
07:00 AM	1	44	0	45	36	20	0	56	46	3	0	49	150
07:15 AM	1	44	0	45	32	23	0	55	42	4	0	46	146
07:30 AM	1	48	0	49	34	10	0	44	38	3	0	41	134
07:45 AM	6	45	0	51	34	22	0	56	39	8	0	47	154
Total	9	181	0	190	136	75	0	211	165	18	0	183	584
08:00 AM	3	34	0	37	33	24	0	57	44	3	0	47	141
08:15 AM	3	42	0	45	28	25	0	53	49	11	0	60	158
08:30 AM	2	59	0	61	46	25	0	71	55	6	0	61	193
08:45 AM	3	60	0	63	47	39	0	86	63	5	0	68	217
Total	11	195	0	206	154	113	0	267	211	25	0	236	709
*** BREAK ***													
04:00 PM	5	65	0	70	84	72	0	156	43	3	0	46	272
04:15 PM	10	61	2	73	87	71	0	158	48	5	3	56	287
04:30 PM	7	54	0	61	67	73	0	140	44	2	0	46	247
04:45 PM	6	54	0	60	79	67	0	146	56	3	3	62	268
Total	28	234	2	264	317	283	0	600	191	13	6	210	1074
05:00 PM	6	66	0	72	63	76	0	139	42	1	0	43	254
05:15 PM	8	62	0	70	80	100	0	180	41	4	0	45	295
05:30 PM	6	60	0	66	60	68	0	128	45	2	0	47	241
05:45 PM	6	62	0	68	99	79	0	178	48	4	0	52	298
Total	26	250	0	276	302	323	0	625	176	11	0	187	1088
Grand Total	74	860	2	936	909	794	0	1703	743	67	6	816	3455
Apprch %	7.9	91.9	0.2		53.4	46.6	0		91.1	8.2	0.7		
Total %	2.1	24.9	0.1	27.1	26.3	23	0	49.3	21.5	1.9	0.2	23.6	
Pass Cars	71	837	0	908	865	780	0	1645	730	65	0	795	3348
% Pass Cars	95.9	97.3	0	97	95.2	98.2	0	96.6	98.3	97	0	97.4	96.9
Single Units	3	17	0	20	35	13	0	48	12	2	0	14	82
% Single Units	4.1	2	0	2.1	3.9	1.6	0	2.8	1.6	3	0	1.7	2.4
Heavy Trucks	0	6	0	6	9	1	0	10	1	0	0	1	17
% Heavy Trucks	0	0.7	0	0.6	1	0.1	0	0.6	0.1	0	0	0.1	0.5
Peds	0	0	2	2	0	0	0	0	0	0	6	6	8
% Peds	0	0	100	0.2	0	0	0	0	0	0	100	0.7	0.2

TDC Traffic Comments: Non-signalized "T" intersection, Campground Road is stop controlled for Van Dyke. Video VCU camera was located within SW intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

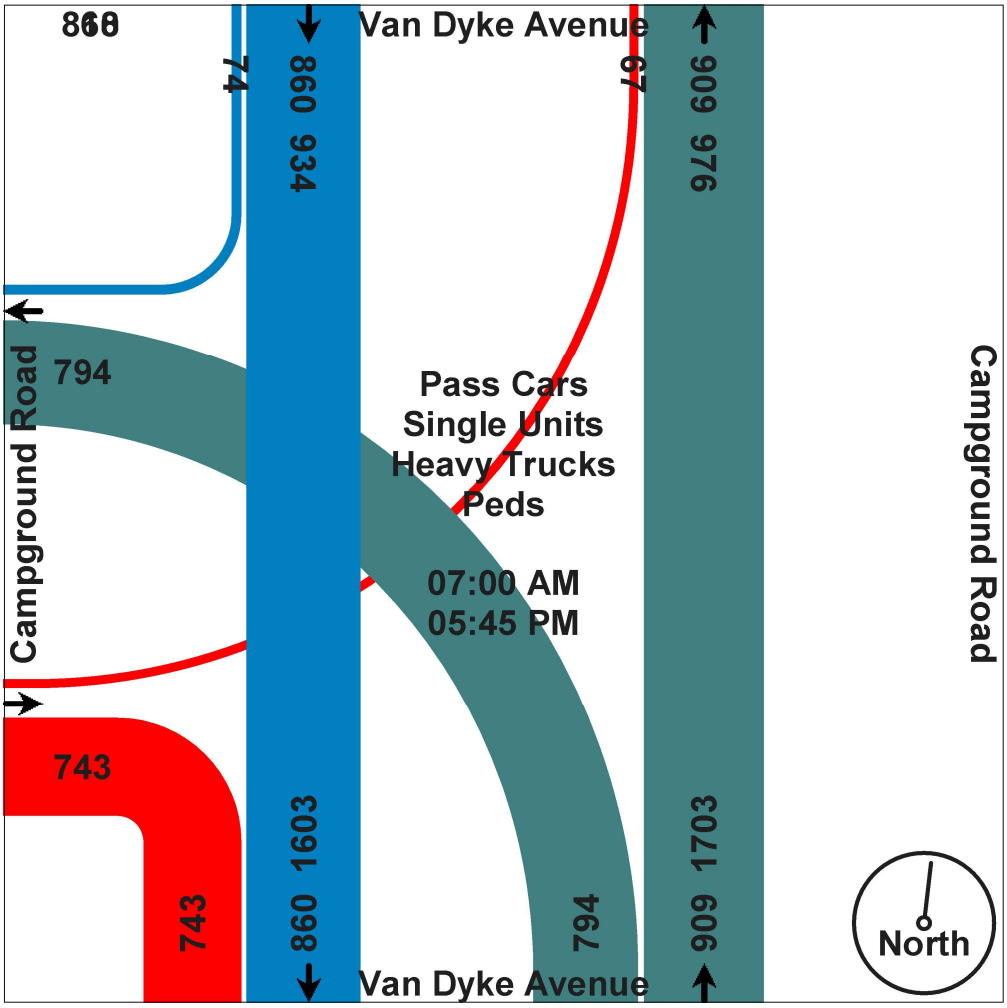
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 24L SW

File Name : TMC_5 Van Dyke & Campground_2-5-19
Site Code : TMC_5
Start Date : 2/5/2019
Page No : 2



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

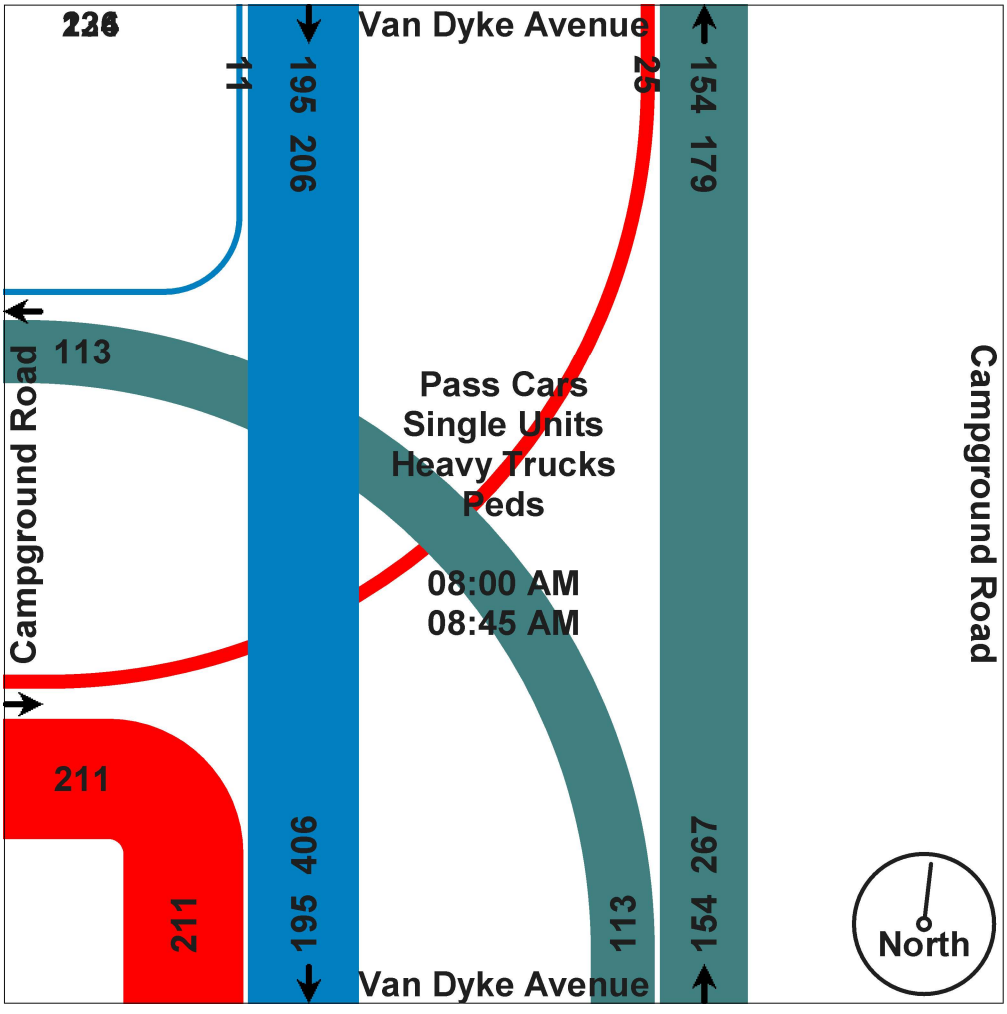
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 24L SW

File Name : TMC_5 Van Dyke & Campground_2-5-19
Site Code : TMC_5
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound			Van Dyke Avenue Northbound			Campground Road Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	**3**	34	37	33	24	57	44	3	47	141
08:15 AM	3	42	45	28	25	53	49	**11**	60	158
08:30 AM	2	59	61	46	25	71	55	6	61	193
08:45 AM	3	**60**	**63**	**47**	**39**	**86**	**63**	5	**68**	**217**
Total Volume	11	195	206	154	113	267	211	25	236	709
% App. Total	5.3	94.7		57.7	42.3		89.4	10.6		
PHF	.917	.813	.817	.819	.724	.776	.837	.568	.868	.817
Pass Cars	8	186	194	131	108	239	207	24	231	664
% Pass Cars	72.7	95.4	94.2	85.1	95.6	89.5	98.1	96.0	97.9	93.7
Single Units	3	8	11	18	5	23	3	1	4	38
% Single Units	27.3	4.1	5.3	11.7	4.4	8.6	1.4	4.0	1.7	5.4
Heavy Trucks	0	1	1	5	0	5	1	0	1	7
% Heavy Trucks	0	0.5	0.5	3.2	0	1.9	0.5	0	0.4	1.0
Peds	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

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Phone: 586.786-5407

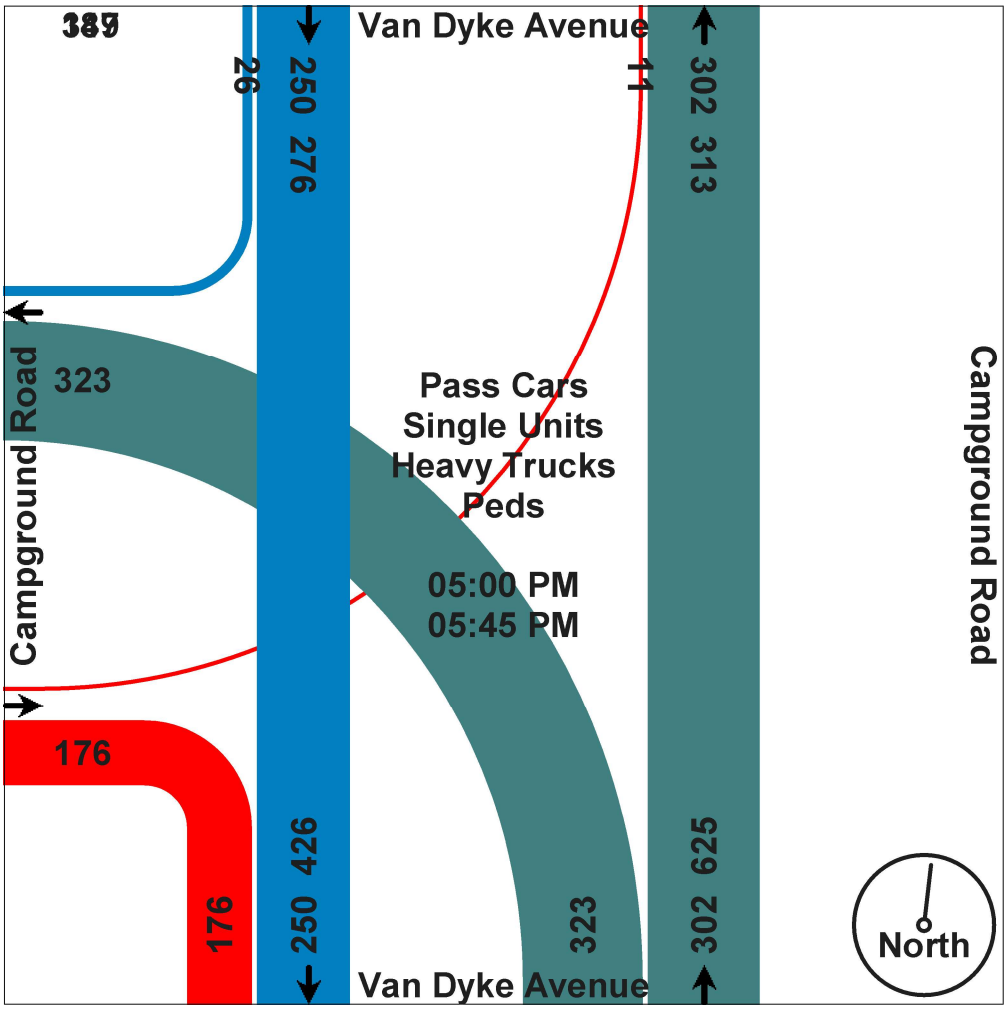
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 24L SW

File Name : TMC_5 Van Dyke & Campground_2-5-19
Site Code : TMC_5
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound			Van Dyke Avenue Northbound			Campground Road Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	6	**66**	**72**	63	76	139	42	1	43	254
05:15 PM	**8**	62	70	80	**100**	**180**	41	**4**	45	295
05:30 PM	6	60	66	60	68	128	45	2	47	241
05:45 PM	6	62	68	**99**	79	178	**48**	4	**52**	**298**
Total Volume	26	250	276	302	323	625	176	11	187	1088
% App. Total	9.4	90.6		48.3	51.7		94.1	5.9		
PHF	.813	.947	.958	.763	.808	.868	.917	.688	.899	.913
Pass Cars	26	248	274	301	321	622	173	10	183	1079
% Pass Cars	100	99.2	99.3	99.7	99.4	99.5	98.3	90.9	97.9	99.2
Single Units	0	1	1	1	2	3	3	1	4	8
% Single Units	0	0.4	0.4	0.3	0.6	0.5	1.7	9.1	2.1	0.7
Heavy Trucks	0	1	1	0	0	0	0	0	0	1
% Heavy Trucks	0	0.4	0.4	0	0	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 5DW SE

File Name : TMC_6 27 Mile & Van Dyke_2-5-19
Site Code : TMC_6
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound				27 Mile Road Westbound				Van Dyke Avenue Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	78	10	0	88	15	24	0	39	15	51	0	66	193
07:15 AM	70	20	0	90	18	28	0	46	11	42	0	53	189
07:30 AM	88	13	0	101	15	32	0	47	12	37	0	49	197
07:45 AM	79	10	0	89	23	31	0	54	18	38	0	56	199
Total	315	53	0	368	71	115	0	186	56	168	0	224	778
08:00 AM	73	7	0	80	6	32	0	38	17	53	0	70	188
08:15 AM	68	11	0	79	17	28	0	45	13	40	0	53	177
08:30 AM	97	23	0	120	19	30	0	49	12	58	0	70	239
08:45 AM	115	23	0	138	27	34	0	61	25	65	0	90	289
Total	353	64	0	417	69	124	0	193	67	216	0	283	893
*** BREAK ***													
04:00 PM	97	17	0	114	19	23	0	42	61	146	0	207	363
04:15 PM	106	12	0	118	16	24	0	40	47	151	0	198	356
04:30 PM	109	14	0	123	11	22	0	33	52	126	0	178	334
04:45 PM	91	19	0	110	13	22	0	35	42	143	0	185	330
Total	403	62	0	465	59	91	0	150	202	566	0	768	1383
05:00 PM	90	14	0	104	17	20	0	37	60	135	0	195	336
05:15 PM	107	21	0	128	14	37	0	51	45	175	0	220	399
05:30 PM	94	23	0	117	21	21	0	42	51	121	0	172	331
05:45 PM	99	21	0	120	22	20	0	42	46	167	0	213	375
Total	390	79	0	469	74	98	0	172	202	598	0	800	1441
Grand Total	1461	258	0	1719	273	428	0	701	527	1548	0	2075	4495
Apprch %	85	15	0		38.9	61.1	0		25.4	74.6	0		
Total %	32.5	5.7	0	38.2	6.1	9.5	0	15.6	11.7	34.4	0	46.2	
Pass Cars	1433	251	0	1684	259	422	0	681	518	1508	0	2026	4391
% Pass Cars	98.1	97.3	0	98	94.9	98.6	0	97.1	98.3	97.4	0	97.6	97.7
Single Units	22	6	0	28	14	6	0	20	9	29	0	38	86
% Single Units	1.5	2.3	0	1.6	5.1	1.4	0	2.9	1.7	1.9	0	1.8	1.9
Heavy Trucks	6	1	0	7	0	0	0	0	0	11	0	11	18
% Heavy Trucks	0.4	0.4	0	0.4	0	0	0	0	0	0.7	0	0.5	0.4
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0

TDC Traffic Comments: Signalized "T" intersection, no ped. signals. Video VCU camera was located within SE intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

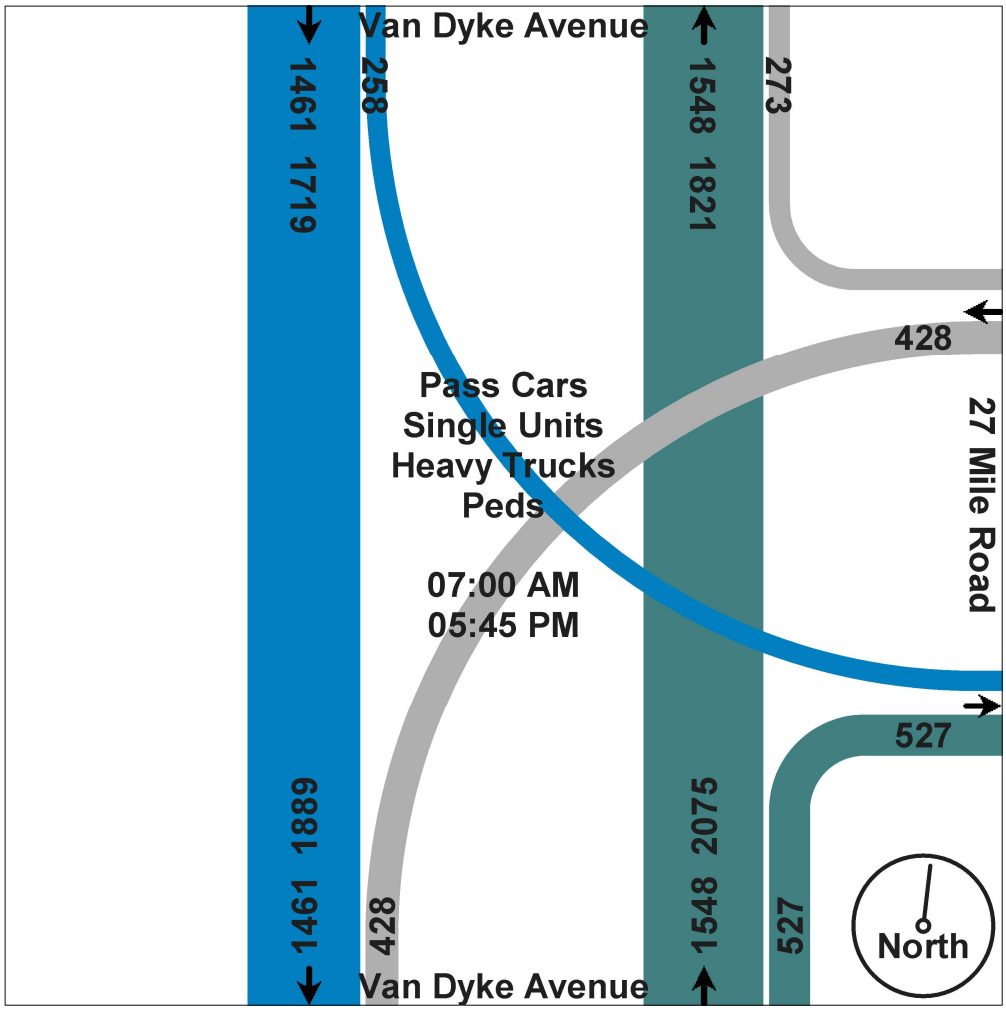
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 5DW SE

File Name : TMC_6 27 Mile & Van Dyke_2-5-19
Site Code : TMC_6
Start Date : 2/5/2019
Page No : 2



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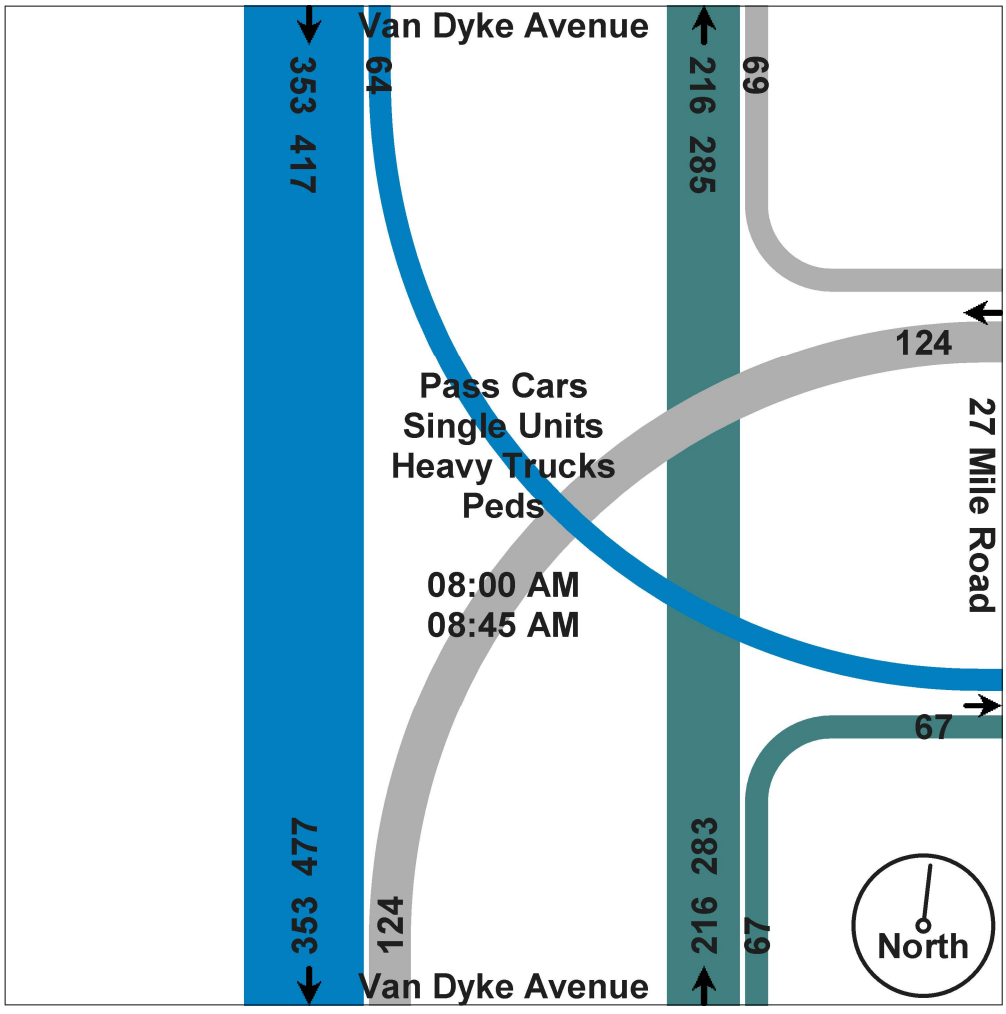
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 5DW SE

File Name : TMC_6 27 Mile & Van Dyke_2-5-19
Site Code : TMC_6
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound			27 Mile Road Westbound			Van Dyke Avenue Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	73	7	80	6	32	38	17	53	70	188
08:15 AM	68	11	79	17	28	45	13	40	53	177
08:30 AM	97	**23**	120	19	30	49	12	58	70	239
08:45 AM	**115**	23	**138**	**27**	**34**	**61**	**25**	**65**	**90**	**289**
Total Volume	353	64	417	69	124	193	67	216	283	893
% App. Total	84.7	15.3		35.8	64.2		23.7	76.3		
PHF	.767	.696	.755	.639	.912	.791	.670	.831	.786	.772
Pass Cars	344	61	405	67	122	189	64	193	257	851
% Pass Cars	97.5	95.3	97.1	97.1	98.4	97.9	95.5	89.4	90.8	95.3
Single Units	7	3	10	2	2	4	3	17	20	34
% Single Units	2.0	4.7	2.4	2.9	1.6	2.1	4.5	7.9	7.1	3.8
Heavy Trucks	2	0	2	0	0	0	0	6	6	8
% Heavy Trucks	0.6	0	0.5	0	0	0	0	2.8	2.1	0.9
Peds	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0



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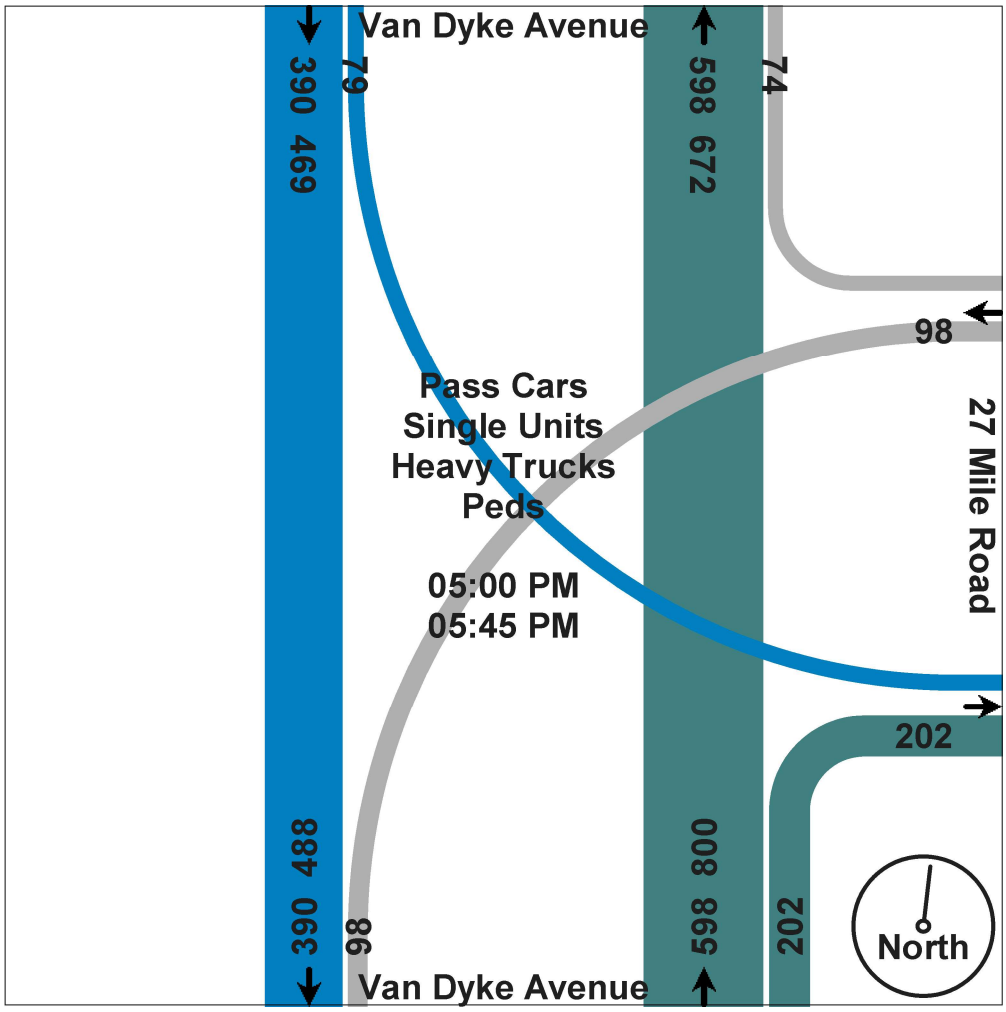
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 5DW SE

File Name : TMC_6 27 Mile & Van Dyke_2-5-19
Site Code : TMC_6
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound			27 Mile Road Westbound			Van Dyke Avenue Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	90	14	104	17	20	37	**60**	135	195	336
05:15 PM	**107**	21	**128**	14	**37**	**51**	45	**175**	**220**	**399**
05:30 PM	94	**23**	117	21	21	42	51	121	172	331
05:45 PM	99	21	120	**22**	20	42	46	167	213	375
Total Volume	390	79	469	74	98	172	202	598	800	1441
% App. Total	83.2	16.8		43	57		25.2	74.8		
PHF	.911	.859	.916	.841	.662	.843	.842	.854	.909	.903
Pass Cars	385	77	462	72	98	170	202	597	799	1431
% Pass Cars	98.7	97.5	98.5	97.3	100	98.8	100	99.8	99.9	99.3
Single Units	4	1	5	2	0	2	0	1	1	8
% Single Units	1.0	1.3	1.1	2.7	0	1.2	0	0.2	0.1	0.6
Heavy Trucks	1	1	2	0	0	0	0	0	0	2
% Heavy Trucks	0.3	1.3	0.4	0	0	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0



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Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3DQ NW

File Name : TMC_7 27 Mile & Jewell_2-5-19
Site Code : TMC_7
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Jewell Road Southbound					27 Mile Road Westbound					Jewell Road Northbound					27 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	31	7	0	41	6	20	11	0	37	1	18	4	0	23	15	8	7	0	30	131
07:15 AM	5	47	13	0	65	2	13	11	0	26	1	21	7	0	29	17	13	4	0	34	154
07:30 AM	4	45	14	0	63	4	16	15	0	35	1	16	7	0	24	12	11	3	0	26	148
07:45 AM	2	31	3	0	36	8	23	11	0	42	4	36	10	0	50	5	10	9	0	24	152
Total	14	154	37	0	205	20	72	48	0	140	7	91	28	0	126	49	42	23	0	114	585
08:00 AM	19	60	6	0	85	3	15	11	0	29	0	26	4	0	30	14	8	15	0	37	181
08:15 AM	8	27	6	0	41	2	16	13	0	31	5	18	7	0	30	12	12	4	0	28	130
08:30 AM	4	30	4	0	38	4	21	11	0	36	2	20	14	0	36	19	5	6	0	30	140
08:45 AM	7	30	5	0	42	6	19	9	0	34	5	20	10	0	35	24	6	14	0	44	155
Total	38	147	21	0	206	15	71	44	0	130	12	84	35	0	131	69	31	39	0	139	606
*** BREAK ***																					
04:00 PM	7	32	7	0	46	6	15	9	0	30	13	21	20	0	54	25	27	15	0	67	197
04:15 PM	4	21	7	0	32	3	15	4	0	22	18	37	19	0	74	20	19	7	0	46	174
04:30 PM	11	36	4	0	51	7	10	7	0	24	17	33	12	0	62	27	22	7	0	56	193
04:45 PM	3	21	1	0	25	7	10	8	0	25	9	41	16	0	66	28	15	7	0	50	166
Total	25	110	19	0	154	23	50	28	0	101	57	132	67	0	256	100	83	36	0	219	730
05:00 PM	6	29	5	0	40	7	14	7	0	28	9	57	18	0	84	23	30	18	0	71	223
05:15 PM	4	22	4	0	30	5	18	5	0	28	15	49	19	0	83	21	24	10	0	55	196
05:30 PM	8	45	8	0	61	3	10	10	0	23	12	34	21	0	67	21	22	18	0	61	212
05:45 PM	5	28	7	0	40	2	11	9	0	22	11	39	20	0	70	21	15	16	0	52	184
Total	23	124	24	0	171	17	53	31	0	101	47	179	78	0	304	86	91	62	0	239	815
Grand Total	100	535	101	0	736	75	246	151	0	472	123	486	208	0	817	304	247	160	0	711	2736
Apprch %	13.6	72.7	13.7	0		15.9	52.1	32	0		15.1	59.5	25.5	0		42.8	34.7	22.5	0		
Total %	3.7	19.6	3.7	0	26.9	2.7	9	5.5	0	17.3	4.5	17.8	7.6	0	29.9	11.1	9	5.8	0	26	
Pass Cars	91	524	99	0	714	72	243	149	0	464	122	475	206	0	803	296	245	157	0	698	2679
% Pass Cars	91	97.9	98	0	97	96	98.8	98.7	0	98.3	99.2	97.7	99	0	98.3	97.4	99.2	98.1	0	98.2	97.9
Single Units	9	10	1	0	20	3	3	2	0	8	1	11	2	0	14	8	2	3	0	13	55
% Single Units	9	1.9	1	0	2.7	4	1.2	1.3	0	1.7	0.8	2.3	1	0	1.7	2.6	0.8	1.9	0	1.8	2
Heavy Trucks	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Heavy Trucks	0	0.2	1	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TDC Traffic Comments: Signalized intersection, no ped. signals. Video VCU camera was located within SE intersection quadrant. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

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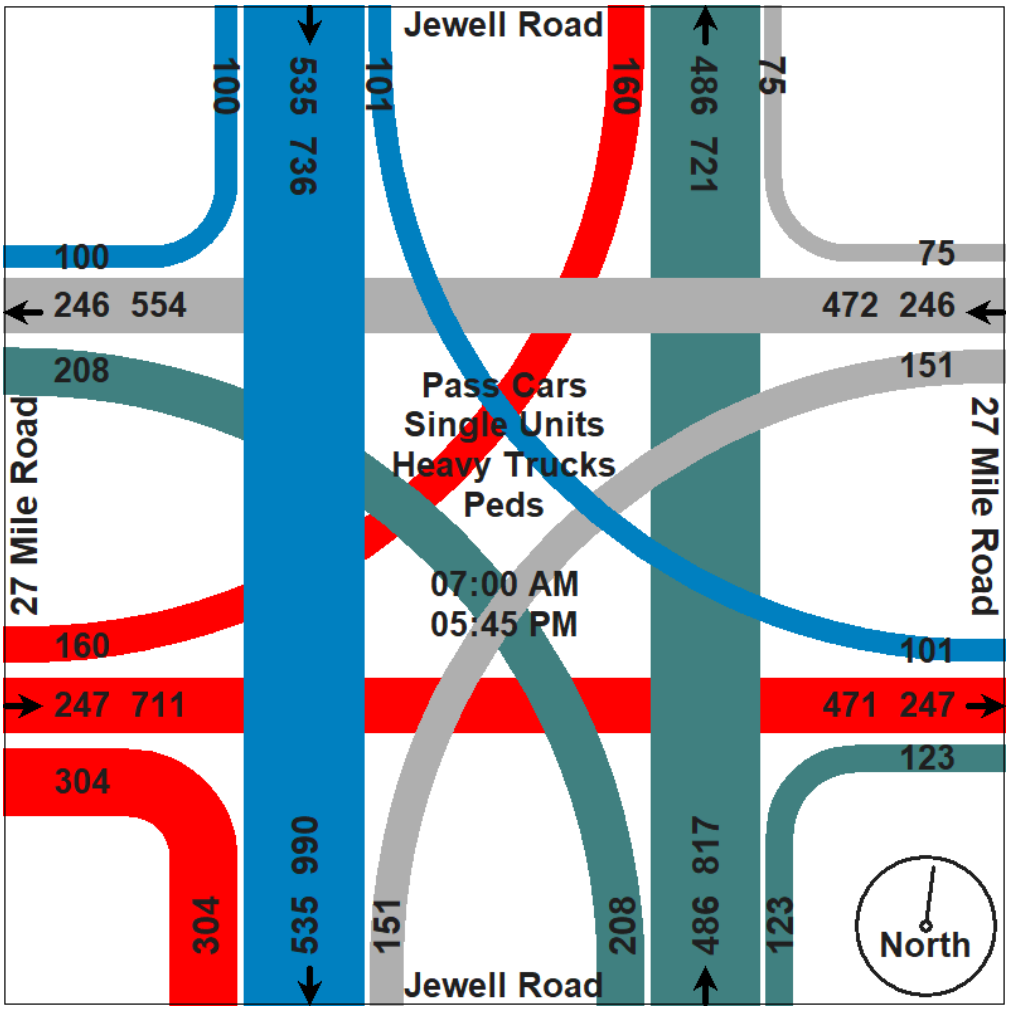
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3DQ NW

File Name : TMC_7 27 Mile & Jewell_2-5-19
Site Code : TMC_7
Start Date : 2/5/2019
Page No : 2



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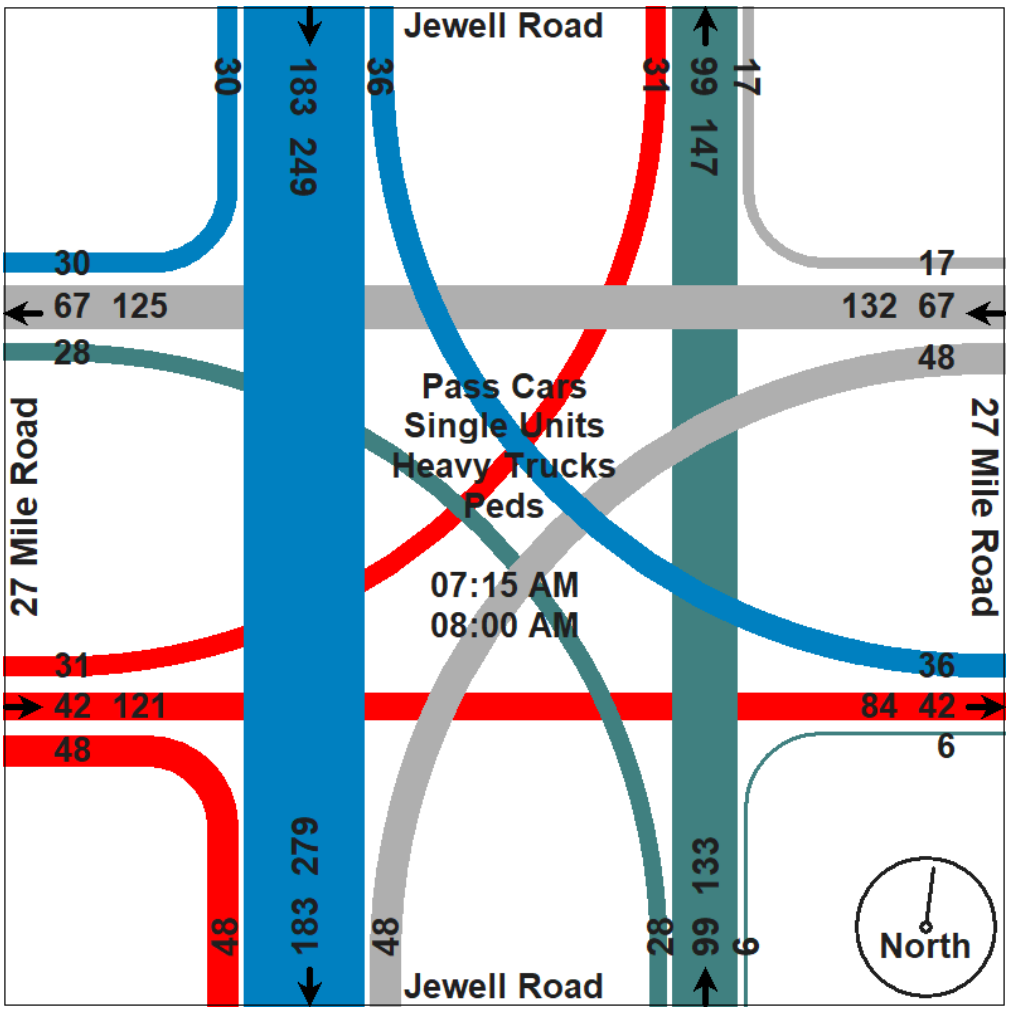
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3DQ NW

File Name : TMC_7 27 Mile & Jewell_2-5-19
Site Code : TMC_7
Start Date : 2/5/2019
Page No : 3

	Jewell Road Southbound				27 Mile Road Westbound				Jewell Road Northbound				27 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	5	47	13	65	2	13	11	26	1	21	7	29	**17**	**13**	4	34	154
07:30 AM	4	45	**14**	63	4	16	**15**	35	1	16	7	24	12	11	3	26	148
07:45 AM	2	31	3	36	**8**	**23**	11	**42**	**4**	**36**	**10**	**50**	5	10	9	24	152
08:00 AM	**19**	**60**	6	**85**	3	15	11	29	0	26	4	30	14	8	**15**	**37**	**181**
Total Volume	30	183	36	249	17	67	48	132	6	99	28	133	48	42	31	121	635
% App. Total	12	73.5	14.5		12.9	50.8	36.4		4.5	74.4	21.1		39.7	34.7	25.6		
PHF	.395	.763	.643	.732	.531	.728	.800	.786	.375	.688	.700	.665	.706	.808	.517	.818	.877
Pass Cars	27	180	35	242	17	65	46	128	6	95	28	129	47	42	30	119	618
% Pass Cars	90.0	98.4	97.2	97.2	100	97.0	95.8	97.0	100	96.0	100	97.0	97.9	100	96.8	98.3	97.3
Single Units	3	3	1	7	0	2	2	4	0	4	0	4	1	0	1	2	17
% Single Units	10.0	1.6	2.8	2.8	0	3.0	4.2	3.0	0	4.0	0	3.0	2.1	0	3.2	1.7	2.7
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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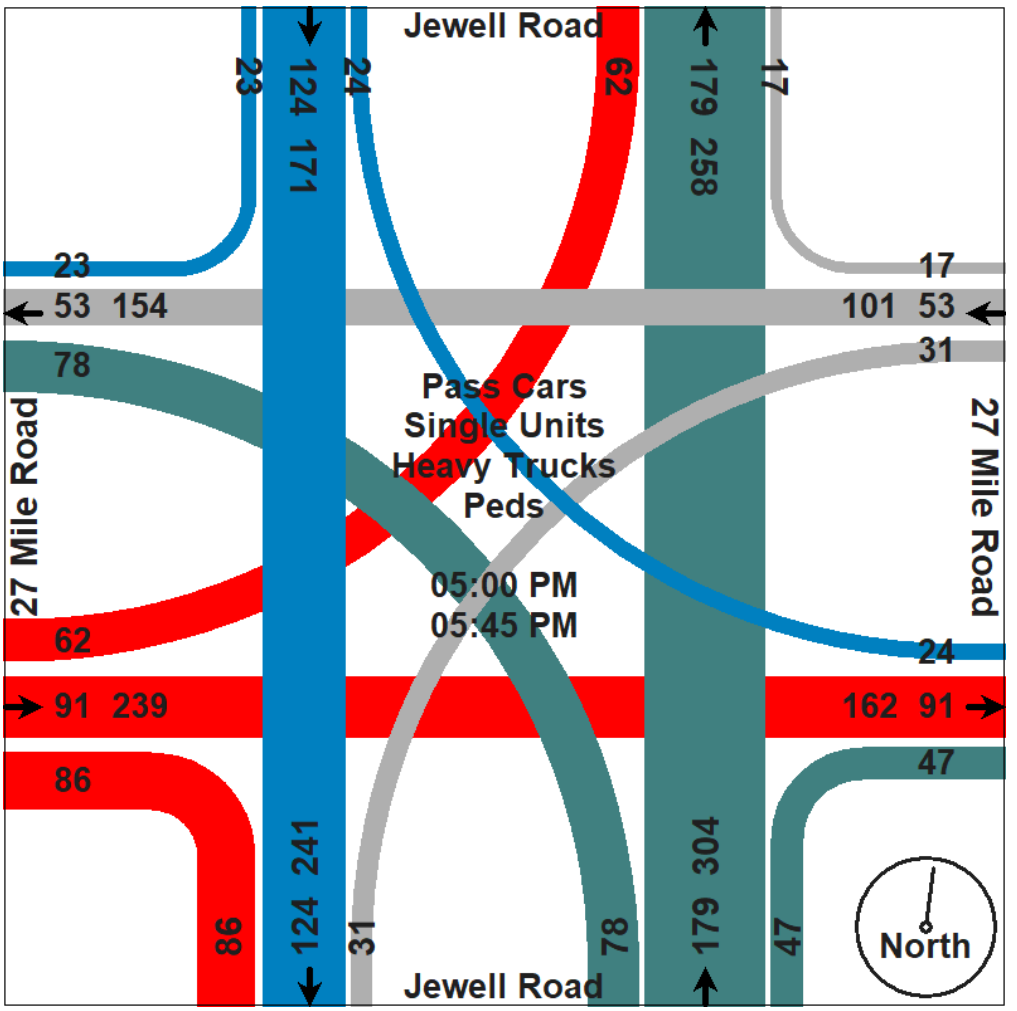
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3DQ NW

File Name : TMC_7 27 Mile & Jewell_2-5-19
Site Code : TMC_7
Start Date : 2/5/2019
Page No : 4

	Jewell Road Southbound				27 Mile Road Westbound				Jewell Road Northbound				27 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	6	29	5	40	**7**	14	7	**28**	9	**57**	18	**84**	**23**	**30**	**18**	**71**	**223**
05:15 PM	4	22	4	30	5	**18**	5	28	**15**	49	19	83	21	24	10	55	196
05:30 PM	**8**	**45**	**8**	**61**	3	10	**10**	23	12	34	**21**	67	21	22	18	61	212
05:45 PM	5	28	7	40	2	11	9	22	11	39	20	70	21	15	16	52	184
Total Volume	23	124	24	171	17	53	31	101	47	179	78	304	86	91	62	239	815
% App. Total	13.5	72.5	14		16.8	52.5	30.7		15.5	58.9	25.7		36	38.1	25.9		
PHF	.719	.689	.750	.701	.607	.736	.775	.902	.783	.785	.929	.905	.935	.758	.861	.842	.914
Pass Cars	23	124	24	171	17	53	31	101	46	179	78	303	86	91	62	239	814
% Pass Cars	100	100	100	100	100	100	100	100	97.9	100	100	99.7	100	100	100	100	99.9
Single Units	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
% Single Units	0	0	0	0	0	0	0	0	2.1	0	0	0.3	0	0	0	0	0.1
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3HT NE

File Name : TMC_8 Van Dyke & West_2-5-19
Site Code : TMC_8
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound					Church Parking Lot Westbound					Van Dyke Avenue Northbound					West Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	89	0	0	95	0	0	0	0	0	0	50	9	0	59	26	0	10	0	36	190
07:15 AM	7	91	0	0	98	0	0	0	0	0	0	56	11	0	67	21	0	3	0	24	189
07:30 AM	20	101	0	0	121	0	0	0	0	0	0	47	9	0	56	28	0	7	0	35	212
07:45 AM	11	107	0	0	118	0	0	0	0	0	0	55	9	0	64	44	0	10	1	55	237
Total	44	388	0	0	432	0	0	0	0	0	0	208	38	0	246	119	0	30	1	150	828
08:00 AM	10	102	0	0	112	0	0	0	0	0	0	54	14	0	68	17	0	9	1	27	207
08:15 AM	6	93	0	0	99	0	0	0	1	1	0	53	11	0	64	10	0	5	0	15	179
08:30 AM	7	118	0	0	125	0	0	0	0	0	0	59	11	0	70	38	0	16	0	54	249
08:45 AM	7	141	0	0	148	0	0	0	0	0	0	106	18	0	124	39	0	11	0	50	322
Total	30	454	0	0	484	0	0	0	1	1	0	272	54	0	326	104	0	41	1	146	957
*** BREAK ***																					
04:00 PM	16	122	0	0	138	0	0	0	0	0	0	222	41	0	263	22	0	16	0	38	439
04:15 PM	13	127	1	0	141	1	0	0	0	1	0	206	36	0	242	18	0	13	0	31	415
04:30 PM	14	117	0	0	131	1	1	0	0	2	0	184	29	0	213	15	0	14	0	29	375
04:45 PM	16	123	0	0	139	0	0	0	0	0	2	174	31	0	207	21	0	18	1	40	386
Total	59	489	1	0	549	2	1	0	0	3	2	786	137	0	925	76	0	61	1	138	1615
05:00 PM	10	116	0	0	126	1	1	0	0	2	0	189	45	0	234	14	0	23	4	41	403
05:15 PM	13	135	0	0	148	1	0	0	0	1	0	208	30	0	238	27	0	14	0	41	428
05:30 PM	17	121	0	0	138	0	0	0	0	0	0	180	43	0	223	16	0	10	0	26	387
05:45 PM	14	110	0	0	124	0	0	1	0	1	0	193	17	0	210	23	0	20	0	43	378
Total	54	482	0	0	536	2	1	1	0	4	0	770	135	0	905	80	0	67	4	151	1596
Grand Total	187	1813	1	0	2001	4	2	1	1	8	2	2036	364	0	2402	379	0	199	7	585	4996
Apprch %	9.3	90.6	0	0		50	25	12.5	12.5		0.1	84.8	15.2	0		64.8	0	34	1.2		
Total %	3.7	36.3	0	0	40.1	0.1	0	0	0	0.2	0	40.8	7.3	0	48.1	7.6	0	4	0.1	11.7	
Pass Cars	180	1784	1	0	1965	4	2	1	0	7	2	1997	358	0	2357	371	0	191	0	562	4891
% Pass Cars	96.3	98.4	100	0	98.2	100	100	100	0	87.5	100	98.1	98.4	0	98.1	97.9	0	96	0	96.1	97.9
Single Units	4	25	0	0	29	0	0	0	0	0	0	31	3	0	34	7	0	4	0	11	74
% Single Units	2.1	1.4	0	0	1.4	0	0	0	0	0	0	1.5	0.8	0	1.4	1.8	0	2	0	1.9	1.5
Heavy Trucks	3	4	0	0	7	0	0	0	0	0	0	8	3	0	11	1	0	4	0	5	23
% Heavy Trucks	1.6	0.2	0	0	0.3	0	0	0	0	0	0	0.4	0.8	0	0.5	0.3	0	2	0	0.9	0.5
Peds	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	7	7	8
% Peds	0	0	0	0	0	0	0	0	100	12.5	0	0	0	0	0	0	0	0	100	1.2	0.2

TDC Traffic Comments: Signalized intersection with ped. signals for all quadrants. Push buttons for north & south legs. Video VCU camera was located within NE intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

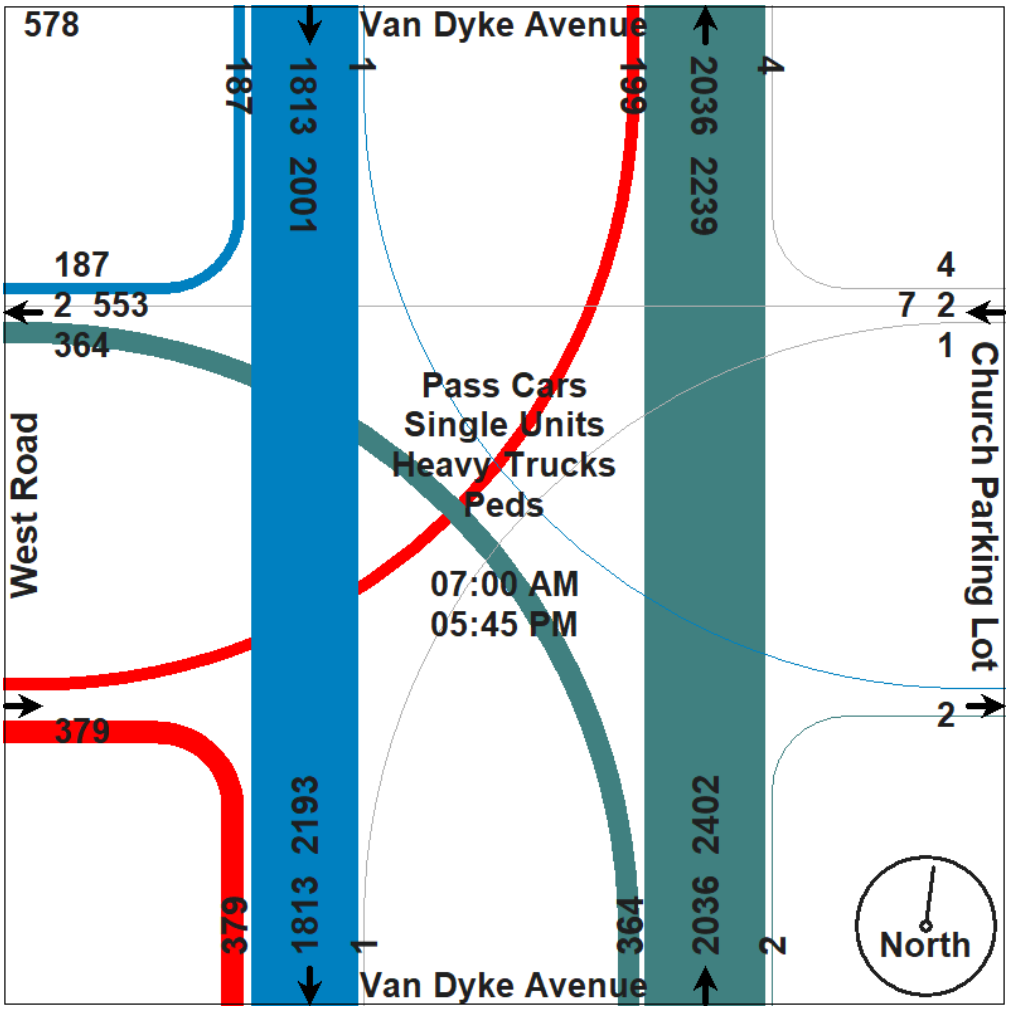
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3HT NE

File Name : TMC_8 Van Dyke & West_2-5-19
Site Code : TMC_8
Start Date : 2/5/2019
Page No : 2



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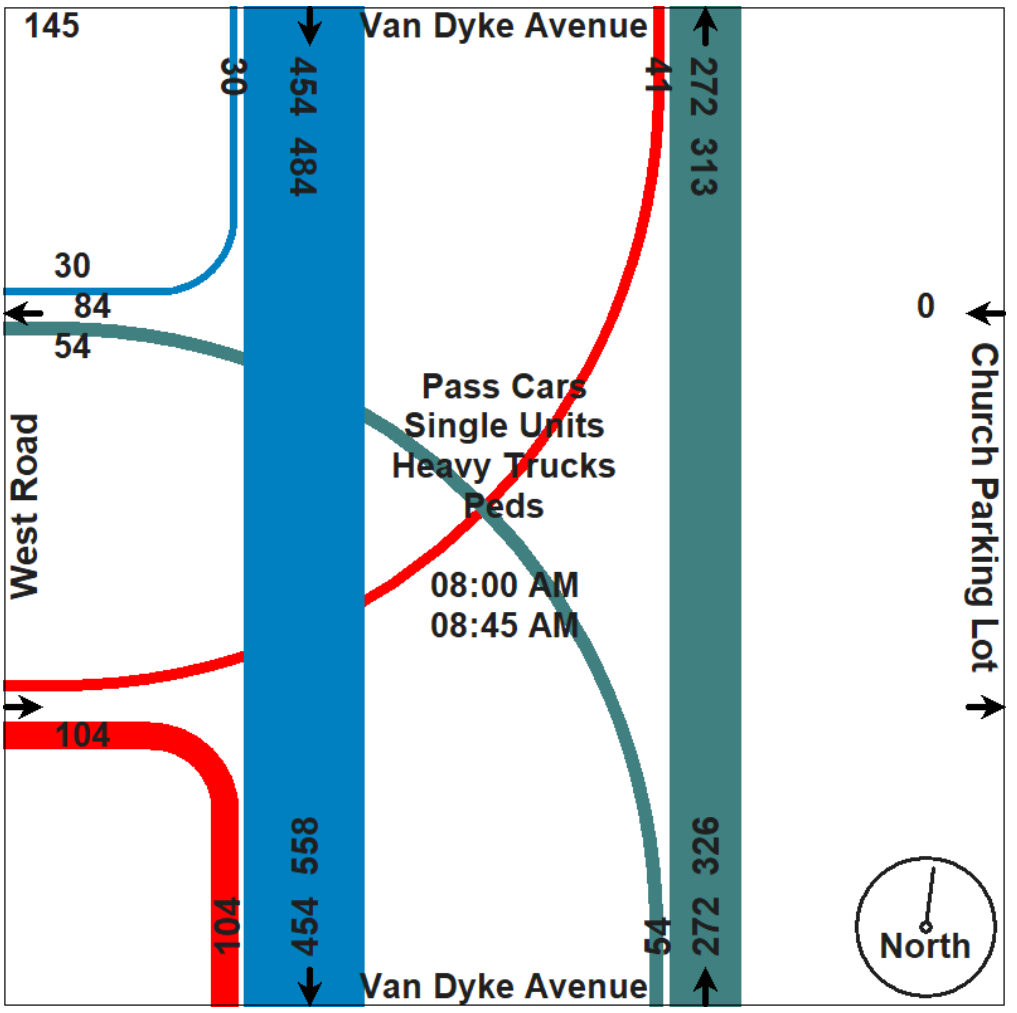
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3HT NE

File Name : TMC_8 Van Dyke & West_2-5-19
Site Code : TMC_8
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound				Church Parking Lot Westbound				Van Dyke Avenue Northbound				West Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	**10**	102	0	112	0	0	0	0	0	54	14	68	17	0	9	26	206
08:15 AM	6	93	0	99	0	0	0	0	0	53	11	64	10	0	5	15	178
08:30 AM	7	118	0	125	0	0	0	0	0	59	11	70	38	0	**16**	**54**	249
08:45 AM	7	**141**	0	**148**	0	0	0	0	0	**106**	**18**	**124**	**39**	0	11	50	**322**
Total Volume	30	454	0	484	0	0	0	0	0	272	54	326	104	0	41	145	955
% App. Total	6.2	93.8	0		0	0	0		0	83.4	16.6		71.7	0	28.3		
PHF	.750	.805	.000	.818	.000	.000	.000	.000	.000	.642	.750	.657	.667	.000	.641	.671	.741
Pass Cars	28	442	0	470	0	0	0	0	0	251	53	304	100	0	37	137	911
% Pass Cars	93.3	97.4	0	97.1	0	0	0	0	0	92.3	98.1	93.3	96.2	0	90.2	94.5	95.4
Single Units	2	10	0	12	0	0	0	0	0	18	1	19	3	0	1	4	35
% Single Units	6.7	2.2	0	2.5	0	0	0	0	0	6.6	1.9	5.8	2.9	0	2.4	2.8	3.7
Heavy Trucks	0	2	0	2	0	0	0	0	0	3	0	3	1	0	3	4	9
% Heavy Trucks	0	0.4	0	0.4	0	0	0	0	0	1.1	0	0.9	1.0	0	7.3	2.8	0.9
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

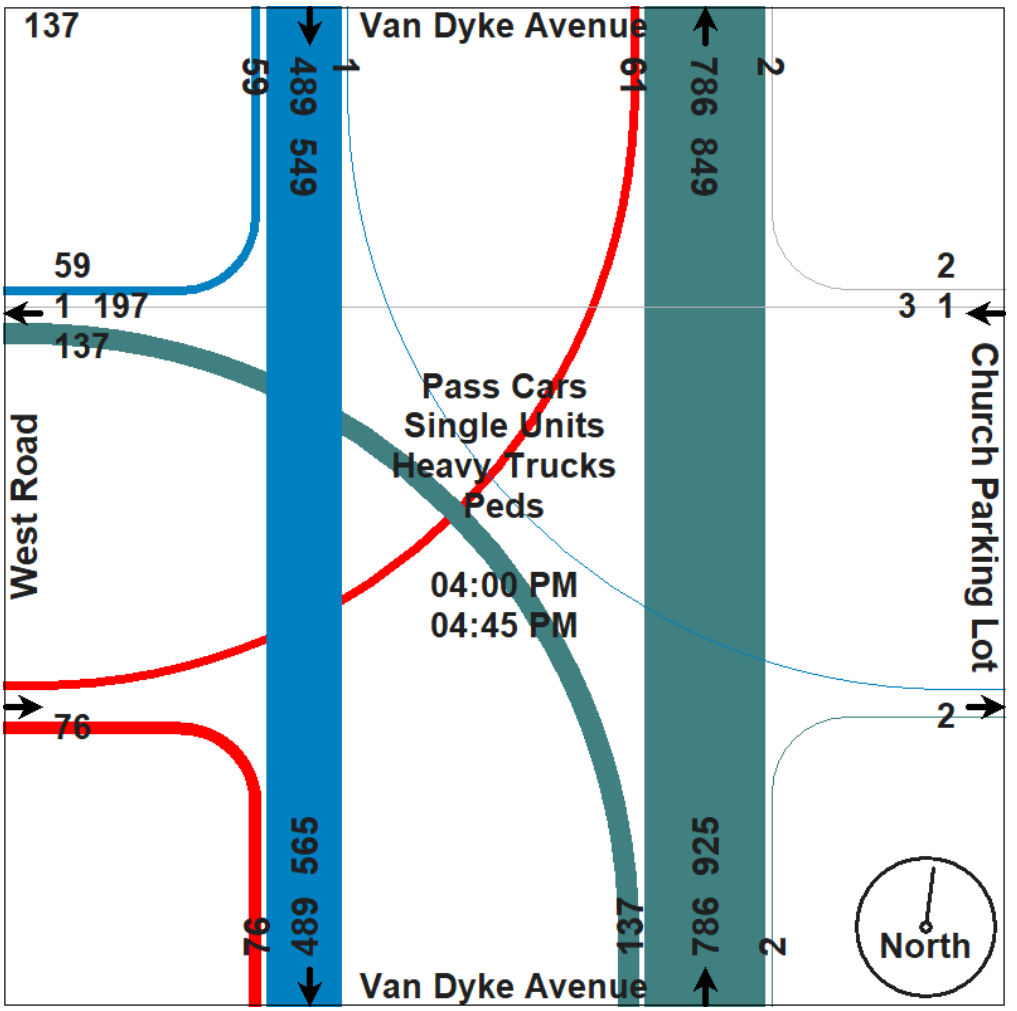
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 3HT NE

File Name : TMC_8 Van Dyke & West_2-5-19
Site Code : TMC_8
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound				Church Parking Lot Westbound				Van Dyke Avenue Northbound				West Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**16**	122	0	138	0	0	0	0	0	**222**	**41**	**263**	**22**	0	16	38	**439**
04:15 PM	13	**127**	**1**	**141**	**1**	0	0	1	0	206	36	242	18	0	13	31	415
04:30 PM	14	117	0	131	1	**1**	0	**2**	0	184	29	213	15	0	14	29	375
04:45 PM	16	123	0	139	0	0	0	0	**2**	174	31	207	21	0	**18**	**39**	385
Total Volume	59	489	1	549	2	1	0	3	2	786	137	925	76	0	61	137	1614
% App. Total	10.7	89.1	0.2		66.7	33.3	0		0.2	85	14.8		55.5	0	44.5		
PHF	.922	.963	.250	.973	.500	.250	.000	.375	.250	.885	.835	.879	.864	.000	.847	.878	.919
Pass Cars	58	485	1	544	2	1	0	3	2	776	137	915	75	0	59	134	1596
% Pass Cars	98.3	99.2	100	99.1	100	100	0	100	100	98.7	100	98.9	98.7	0	96.7	97.8	98.9
Single Units	1	4	0	5	0	0	0	0	0	7	0	7	1	0	2	3	15
% Single Units	1.7	0.8	0	0.9	0	0	0	0	0	0.9	0	0.8	1.3	0	3.3	2.2	0.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
% Heavy Trucks	0	0	0	0	0	0	0	0	0	0.4	0	0.3	0	0	0	0	0.2
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EU NE

File Name : TMC_9 WB 26 Mile & Van Dyke_2-5-19
Site Code : TMC_9
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound					WB 26 Mile Road Westbound					Van Dyke Avenue Northbound					WB 26 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	57	93	0	0	150	21	234	0	0	255	0	37	0	0	37	0	0	0	0	0	442
07:15 AM	41	86	0	0	127	28	230	0	0	258	0	42	0	0	42	0	0	0	0	0	427
07:30 AM	47	102	0	0	149	27	251	0	0	278	0	29	0	0	29	0	0	0	0	0	456
07:45 AM	70	94	0	0	164	39	242	0	0	281	0	45	0	0	45	0	0	0	0	0	490
Total	215	375	0	0	590	115	957	0	0	1072	0	153	0	0	153	0	0	0	0	0	1815
08:00 AM	58	69	0	0	127	32	205	0	0	237	0	50	0	0	50	0	0	0	0	0	414
08:15 AM	45	77	0	0	122	26	174	0	0	200	0	53	0	0	53	0	0	0	0	0	375
08:30 AM	45	81	0	0	126	40	155	0	0	195	0	45	0	0	45	0	0	0	0	0	366
08:45 AM	64	126	0	0	190	73	164	0	0	237	0	86	0	0	86	0	0	0	0	0	513
Total	212	353	0	0	565	171	698	0	0	869	0	234	0	0	234	0	0	0	0	0	1668
*** BREAK ***																					
04:00 PM	70	124	0	0	194	64	263	0	0	327	0	152	0	0	152	0	0	0	0	0	673
04:15 PM	60	108	0	0	168	66	248	0	0	314	0	185	0	0	185	0	0	0	2	2	669
04:30 PM	35	103	0	1	139	60	307	0	0	367	0	146	0	0	146	0	0	0	0	0	652
04:45 PM	39	108	0	0	147	73	258	0	0	331	0	164	0	0	164	0	0	0	0	0	642
Total	204	443	0	1	648	263	1076	0	0	1339	0	647	0	0	647	0	0	0	2	2	2636
05:00 PM	50	72	0	0	122	83	276	0	0	359	0	142	0	0	142	0	0	0	0	0	623
05:15 PM	61	107	0	0	168	68	283	0	0	351	0	187	0	0	187	0	0	0	0	0	706
05:30 PM	44	97	0	0	141	72	327	0	0	399	0	155	0	0	155	0	0	0	0	0	695
05:45 PM	40	100	0	0	140	63	255	0	0	318	0	147	0	0	147	0	0	0	0	0	605
Total	195	376	0	0	571	286	1141	0	0	1427	0	631	0	0	631	0	0	0	0	0	2629
Grand Total	826	1547	0	1	2374	835	3872	0	0	4707	0	1665	0	0	1665	0	0	0	2	2	8748
Apprch %	34.8	65.2	0	0		17.7	82.3	0	0		0	100	0	0		0	0	0	100		
Total %	9.4	17.7	0	0	27.1	9.5	44.3	0	0	53.8	0	19	0	0	19	0	0	0	0	0	
Pass Cars	814	1523	0	0	2337	814	3816	0	0	4630	0	1648	0	0	1648	0	0	0	0	0	8615
% Pass Cars	98.5	98.4	0	0	98.4	97.5	98.6	0	0	98.4	0	99	0	0	99	0	0	0	0	0	98.5
Single Units	11	19	0	0	30	16	42	0	0	58	0	12	0	0	12	0	0	0	0	0	100
% Single Units	1.3	1.2	0	0	1.3	1.9	1.1	0	0	1.2	0	0.7	0	0	0.7	0	0	0	0	0	1.1
Heavy Trucks	1	5	0	0	6	5	14	0	0	19	0	5	0	0	5	0	0	0	0	0	30
% Heavy Trucks	0.1	0.3	0	0	0.3	0.6	0.4	0	0	0.4	0	0.3	0	0	0.3	0	0	0	0	0	0.3
Peds	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3
% Peds	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0

TDC Traffic Comments: Signalized intersection with push buttons ped. signals for west, north & east legs. Video VCU camera was located within NE intersection quadrant. Left turns prohibited for approach legs. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

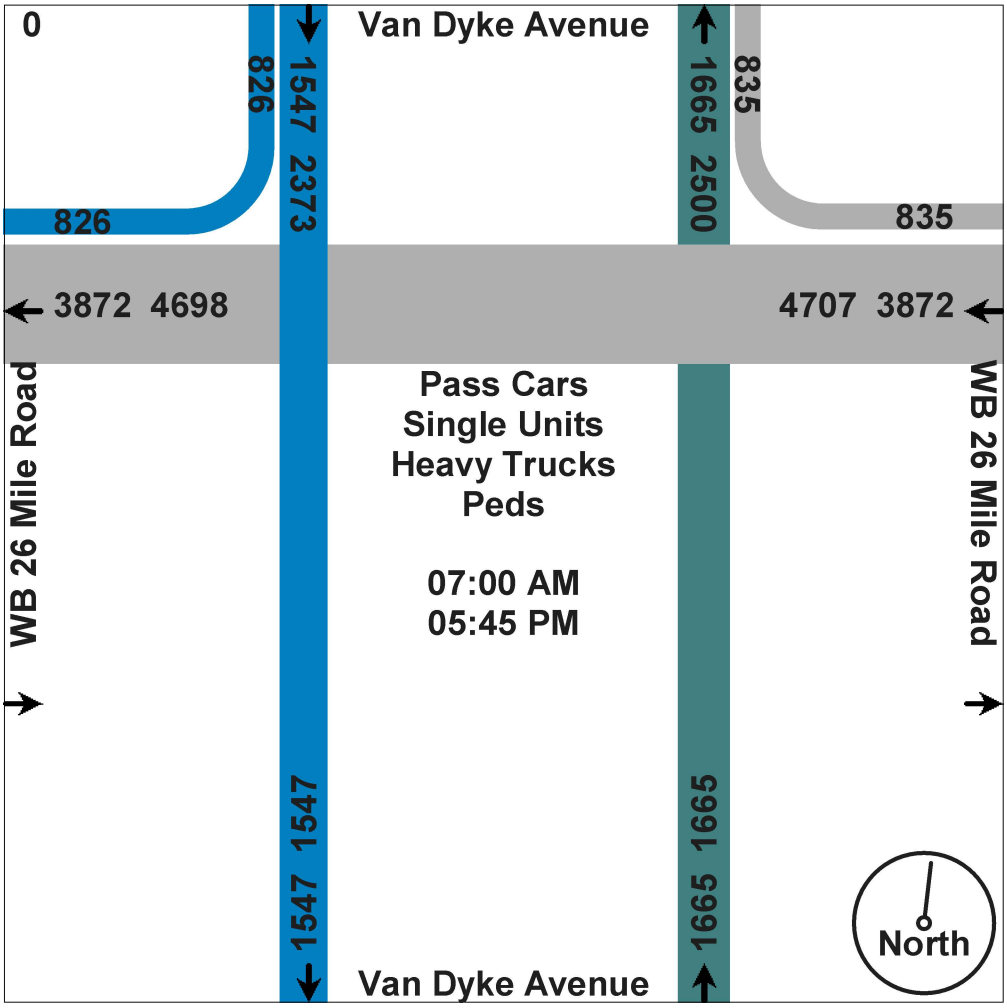
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EU NE

File Name : TMC_9 WB 26 Mile & Van Dyke_2-5-19
Site Code : TMC_9
Start Date : 2/5/2019
Page No : 2



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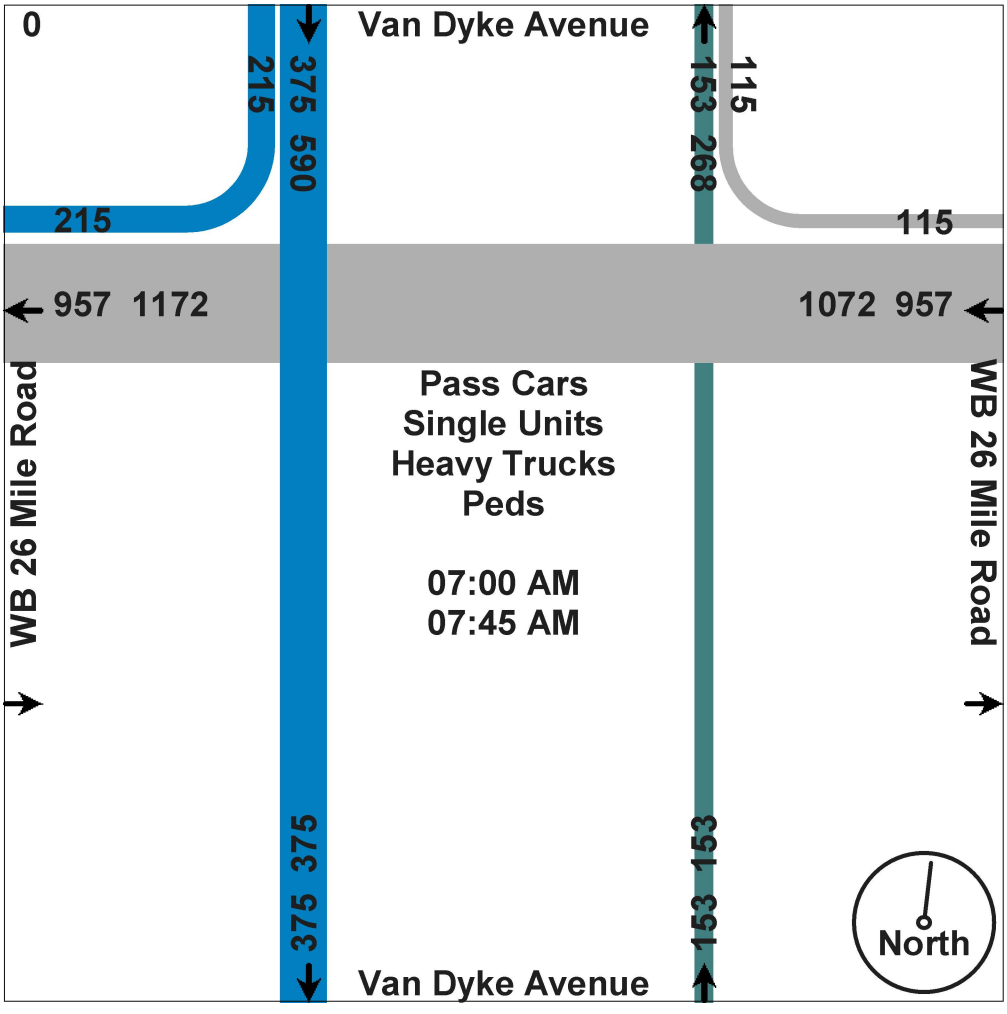
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EU NE

File Name : TMC_9 WB 26 Mile & Van Dyke_2-5-19
Site Code : TMC_9
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound				WB 26 Mile Road Westbound				Van Dyke Avenue Northbound				WB 26 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	57	93	0	150	21	234	0	255	0	37	0	37	0	0	0	0	442
07:15 AM	41	86	0	127	28	230	0	258	0	42	0	42	0	0	0	0	427
07:30 AM	47	**102**	0	149	27	**251**	0	278	0	29	0	29	0	0	0	0	456
07:45 AM	**70**	94	0	**164**	**39**	242	0	**281**	0	**45**	0	**45**	0	0	0	0	**490**
Total Volume	215	375	0	590	115	957	0	1072	0	153	0	153	0	0	0	0	1815
% App. Total	36.4	63.6	0		10.7	89.3	0		0	100	0		0	0	0		
PHF	.768	.919	.000	.899	.737	.953	.000	.954	.000	.850	.000	.850	.000	.000	.000	.000	.926
Pass Cars	211	367	0	578	109	935	0	1044	0	148	0	148	0	0	0	0	1770
% Pass Cars	98.1	97.9	0	98.0	94.8	97.7	0	97.4	0	96.7	0	96.7	0	0	0	0	97.5
Single Units	4	8	0	12	5	15	0	20	0	4	0	4	0	0	0	0	36
% Single Units	1.9	2.1	0	2.0	4.3	1.6	0	1.9	0	2.6	0	2.6	0	0	0	0	2.0
Heavy Trucks	0	0	0	0	1	7	0	8	0	1	0	1	0	0	0	0	9
% Heavy Trucks	0	0	0	0	0.9	0.7	0	0.7	0	0.7	0	0.7	0	0	0	0	0.5
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

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Phone: 586.786-5407

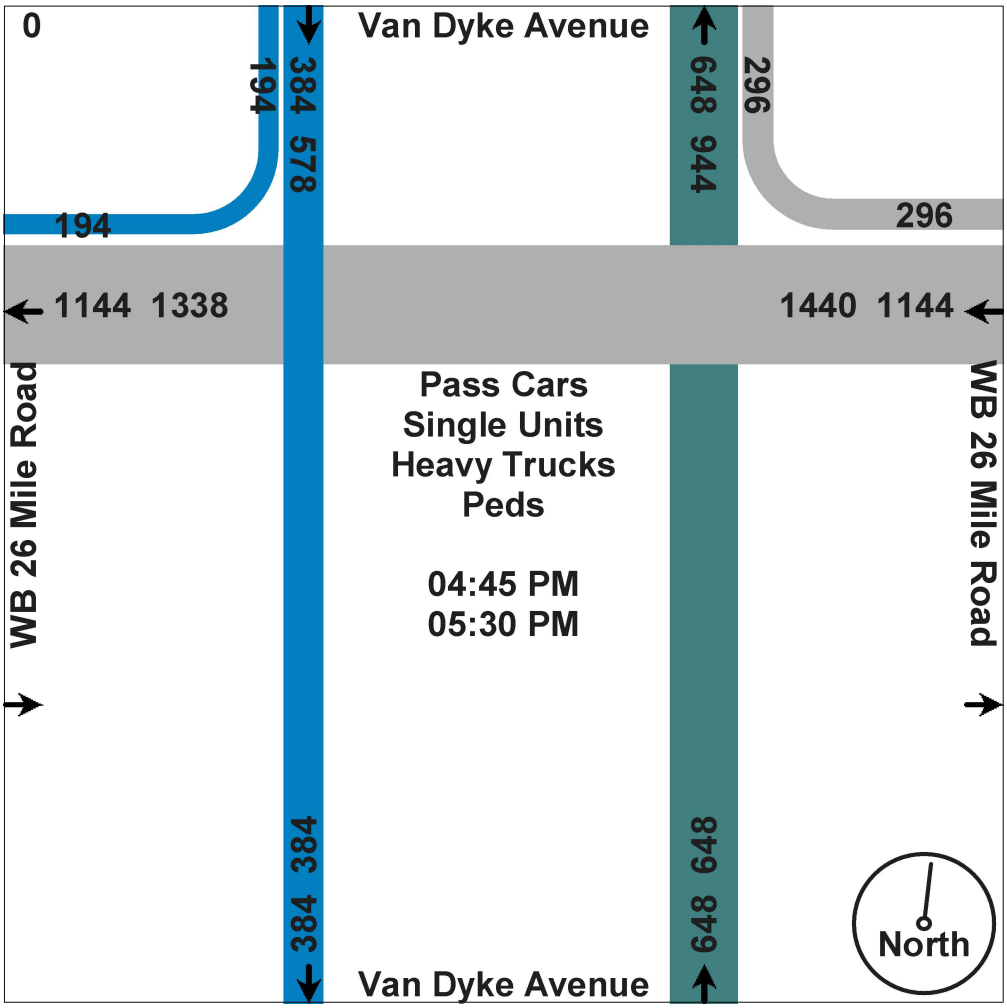
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EU NE

File Name : TMC_9 WB 26 Mile & Van Dyke_2-5-19
Site Code : TMC_9
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound				WB 26 Mile Road Westbound				Van Dyke Avenue Northbound				WB 26 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	39	**108**	0	147	73	258	0	331	0	164	0	164	0	0	0	0	642
05:00 PM	50	72	0	122	**83**	276	0	359	0	142	0	142	0	0	0	0	623
05:15 PM	**61**	107	0	**168**	68	283	0	351	0	**187**	0	**187**	0	0	0	0	**706**
05:30 PM	44	97	0	141	72	**327**	0	**399**	0	155	0	155	0	0	0	0	695
Total Volume	194	384	0	578	296	1144	0	1440	0	648	0	648	0	0	0	0	2666
% App. Total	33.6	66.4	0		20.6	79.4	0		0	100	0		0	0	0		
PHF	.795	.889	.000	.860	.892	.875	.000	.902	.000	.866	.000	.866	.000	.000	.000	.000	.944
Pass Cars	194	380	0	574	294	1136	0	1430	0	648	0	648	0	0	0	0	2652
% Pass Cars	100	99.0	0	99.3	99.3	99.3	0	99.3	0	100	0	100	0	0	0	0	99.5
Single Units	0	3	0	3	1	5	0	6	0	0	0	0	0	0	0	0	9
% Single Units	0	0.8	0	0.5	0.3	0.4	0	0.4	0	0	0	0	0	0	0	0	0.3
Heavy Trucks	0	1	0	1	1	3	0	4	0	0	0	0	0	0	0	0	5
% Heavy Trucks	0	0.3	0	0.2	0.3	0.3	0	0.3	0	0	0	0	0	0	0	0	0.2
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EY SW

File Name : TMC_10 EB 26 Mile Road & Van Dyke_2-5-19
Site Code : TMC_10
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Van Dyke Avenue Southbound					EB 26 Mile Road Westbound					Van Dyke Avenue Northbound					EB 26 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	93	0	0	93	0	0	0	0	0	33	38	0	0	71	59	169	0	0	228	392
07:15 AM	0	86	0	0	86	0	0	0	0	0	27	43	0	0	70	53	168	0	0	221	377
07:30 AM	0	103	0	0	103	0	0	0	0	0	33	30	0	0	63	58	216	0	0	274	440
07:45 AM	0	94	0	0	94	0	0	0	0	0	45	45	0	0	90	48	183	0	0	231	415
Total	0	376	0	0	376	0	0	0	0	0	138	156	0	0	294	218	736	0	0	954	1624
08:00 AM	0	68	0	0	68	0	0	0	0	0	40	50	0	0	90	32	203	0	0	235	393
08:15 AM	0	77	0	0	77	0	0	0	0	0	44	52	0	0	96	33	178	0	0	211	384
08:30 AM	0	81	0	0	81	0	0	0	0	0	31	44	0	0	75	38	197	0	0	235	391
08:45 AM	0	127	0	0	127	0	0	0	0	0	42	86	0	0	128	34	194	0	0	228	483
Total	0	353	0	0	353	0	0	0	0	0	157	232	0	0	389	137	772	0	0	909	1651
*** BREAK ***																					
04:00 PM	0	123	0	0	123	0	0	0	0	0	83	153	0	0	236	52	291	0	0	343	702
04:15 PM	0	109	0	0	109	0	0	0	0	0	74	187	0	0	261	51	293	0	0	344	714
04:30 PM	0	102	0	0	102	0	0	0	0	0	78	145	0	0	223	57	307	0	0	364	689
04:45 PM	0	108	0	0	108	0	0	0	0	0	89	160	0	0	249	57	283	0	0	340	697
Total	0	442	0	0	442	0	0	0	0	0	324	645	0	0	969	217	1174	0	0	1391	2802
05:00 PM	0	75	0	0	75	0	0	0	0	0	82	143	0	0	225	59	342	0	0	401	701
05:15 PM	0	109	0	0	109	0	0	0	0	0	76	185	0	0	261	54	296	0	0	350	720
05:30 PM	0	98	0	0	98	0	0	0	0	0	90	153	0	0	243	55	270	0	0	325	666
05:45 PM	0	102	0	0	102	0	0	0	0	0	74	145	0	0	219	52	232	0	0	284	605
Total	0	384	0	0	384	0	0	0	0	0	322	626	0	0	948	220	1140	0	0	1360	2692
Grand Total	0	1555	0	0	1555	0	0	0	0	0	941	1659	0	0	2600	792	3822	0	0	4614	8769
Apprch %	0	100	0	0		0	0	0	0		36.2	63.8	0	0		17.2	82.8	0	0		
Total %	0	17.7	0	0	17.7	0	0	0	0	0	10.7	18.9	0	0	29.6	9	43.6	0	0	52.6	
Pass Cars	0	1528	0	0	1528	0	0	0	0	0	923	1646	0	0	2569	772	3773	0	0	4545	8642
% Pass Cars	0	98.3	0	0	98.3	0	0	0	0	0	98.1	99.2	0	0	98.8	97.5	98.7	0	0	98.5	98.6
Single Units	0	22	0	0	22	0	0	0	0	0	12	10	0	0	22	15	41	0	0	56	100
% Single Units	0	1.4	0	0	1.4	0	0	0	0	0	1.3	0.6	0	0	0.8	1.9	1.1	0	0	1.2	1.1
Heavy Trucks	0	5	0	0	5	0	0	0	0	0	6	3	0	0	9	5	8	0	0	13	27
% Heavy Trucks	0	0.3	0	0	0.3	0	0	0	0	0	0.6	0.2	0	0	0.3	0.6	0.2	0	0	0.3	0.3
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TDC Traffic Comments: Signalized intersection with push button ped. signals for west., south & east legs. Left turns prohibited for all approach legs. Video VCU camera was located within SW intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

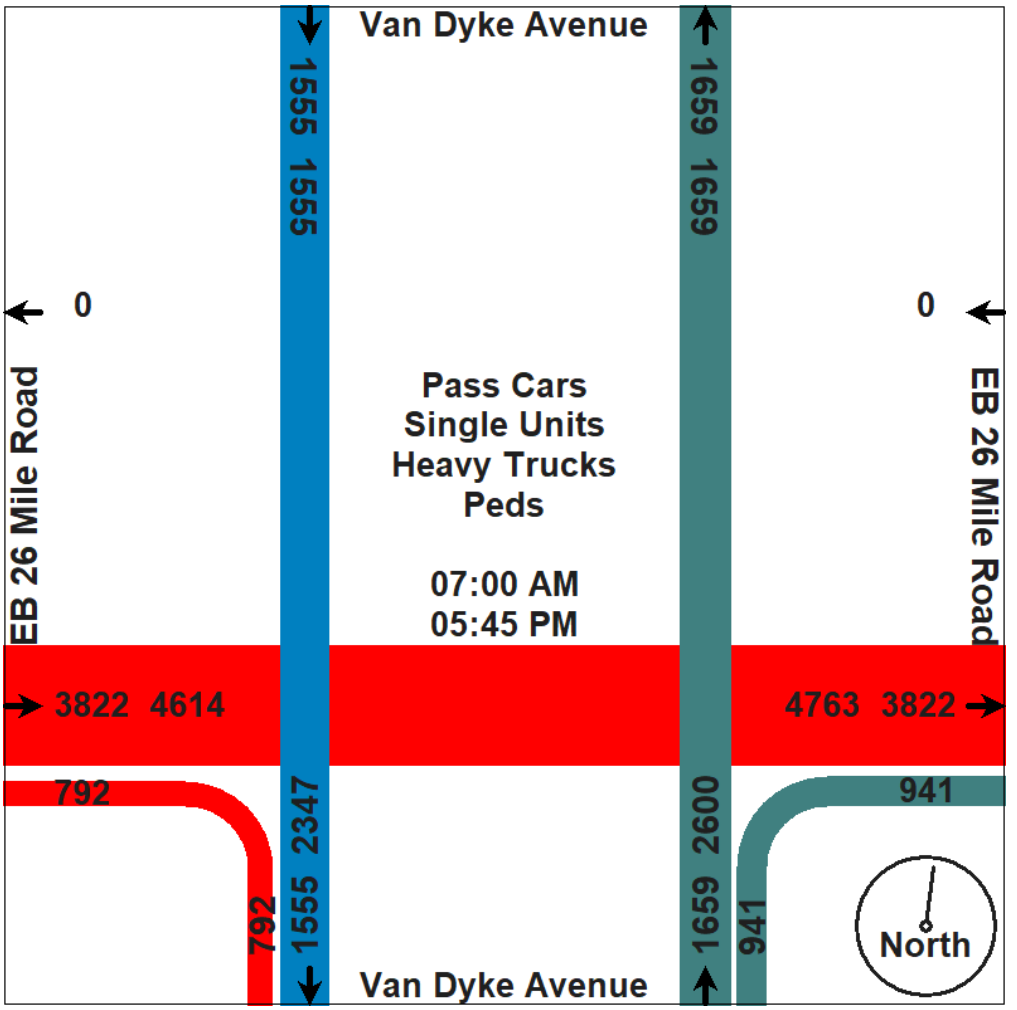
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EY SW

File Name : TMC_10 EB 26 Mile Road & Van Dyke_2-5-19
Site Code : TMC_10
Start Date : 2/5/2019
Page No : 2



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Phone: 586.786-5407

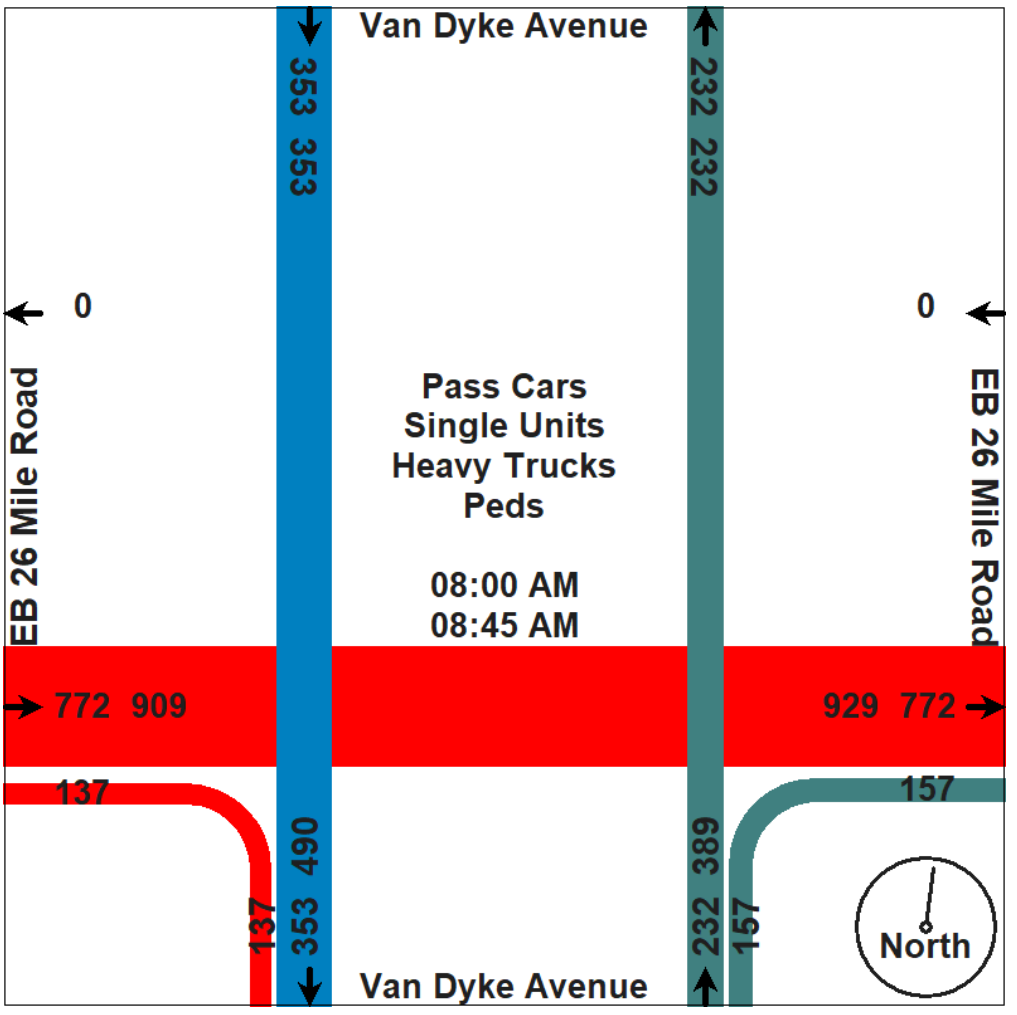
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EY SW

File Name : TMC_10 EB 26 Mile Road & Van Dyke_2-5-19
Site Code : TMC_10
Start Date : 2/5/2019
Page No : 3

	Van Dyke Avenue Southbound				EB 26 Mile Road Westbound				Van Dyke Avenue Northbound				EB 26 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	68	0	68	0	0	0	0	40	50	0	90	32	**203**	0	**235**	393
08:15 AM	0	77	0	77	0	0	0	0	**44**	52	0	96	33	178	0	211	384
08:30 AM	0	81	0	81	0	0	0	0	31	44	0	75	**38**	197	0	235	391
08:45 AM	0	**127**	0	**127**	0	0	0	0	42	**86**	0	**128**	34	194	0	228	**483**
Total Volume	0	353	0	353	0	0	0	0	157	232	0	389	137	772	0	909	1651
% App. Total	0	100	0		0	0	0		40.4	59.6	0		15.1	84.9	0		
PHF	.000	.695	.000	.695	.000	.000	.000	.000	.892	.674	.000	.760	.901	.951	.000	.967	.855
Pass Cars	0	344	0	344	0	0	0	0	150	223	0	373	131	755	0	886	1603
% Pass Cars	0	97.5	0	97.5	0	0	0	0	95.5	96.1	0	95.9	95.6	97.8	0	97.5	97.1
Single Units	0	5	0	5	0	0	0	0	3	7	0	10	5	13	0	18	33
% Single Units	0	1.4	0	1.4	0	0	0	0	1.9	3.0	0	2.6	3.6	1.7	0	2.0	2.0
Heavy Trucks	0	4	0	4	0	0	0	0	4	2	0	6	1	4	0	5	15
% Heavy Trucks	0	1.1	0	1.1	0	0	0	0	2.5	0.9	0	1.5	0.7	0.5	0	0.6	0.9
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

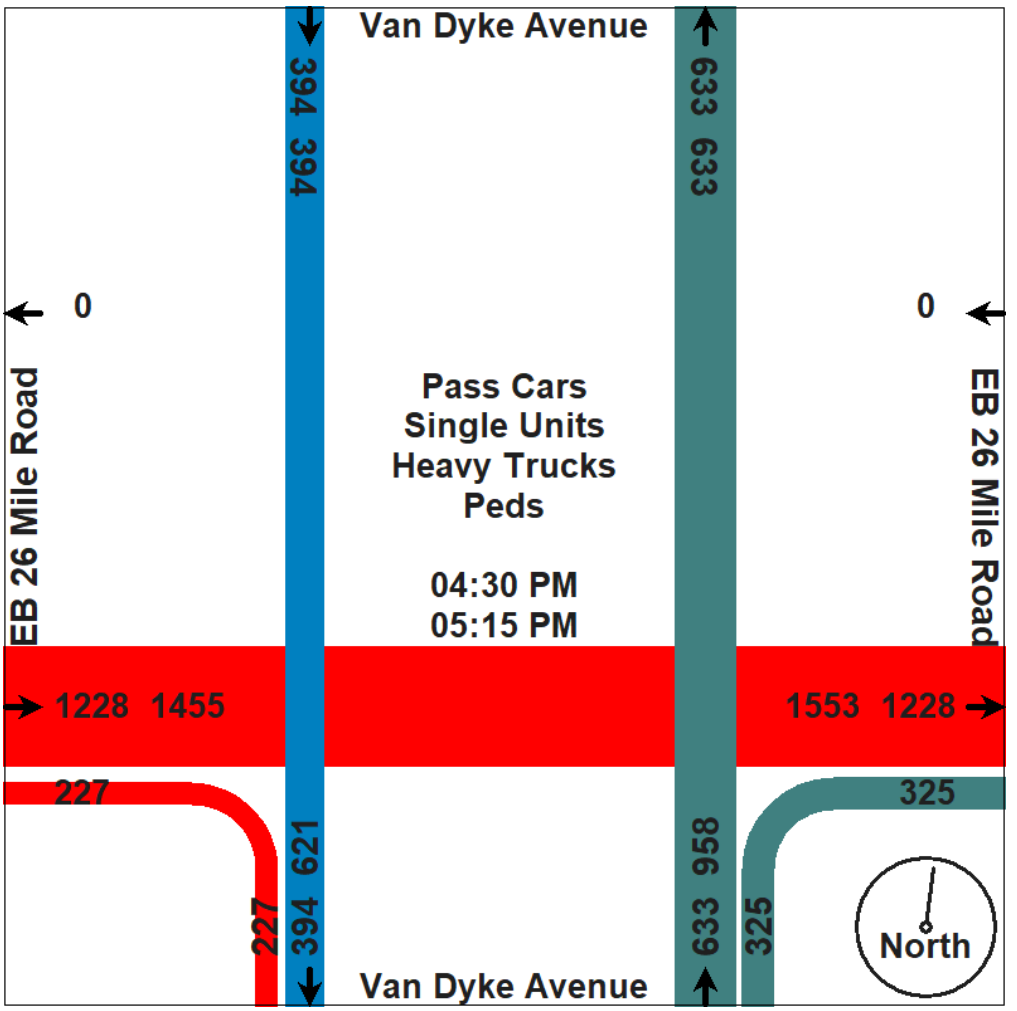
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 8EY SW

File Name : TMC_10 EB 26 Mile Road & Van Dyke_2-5-19
Site Code : TMC_10
Start Date : 2/5/2019
Page No : 4

	Van Dyke Avenue Southbound				EB 26 Mile Road Westbound				Van Dyke Avenue Northbound				EB 26 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	102	0	102	0	0	0	0	78	145	0	223	57	307	0	364	689
04:45 PM	0	108	0	108	0	0	0	0	**89**	160	0	249	57	283	0	340	697
05:00 PM	0	75	0	75	0	0	0	0	82	143	0	225	**59**	**342**	0	**401**	701
05:15 PM	0	**109**	0	**109**	0	0	0	0	76	**185**	0	**261**	54	296	0	350	**720**
Total Volume	0	394	0	394	0	0	0	0	325	633	0	958	227	1228	0	1455	2807
% App. Total	0	100	0		0	0	0		33.9	66.1	0		15.6	84.4	0		
PHF	.000	.904	.000	.904	.000	.000	.000	.000	.913	.855	.000	.918	.962	.898	.000	.907	.975
Pass Cars	0	390	0	390	0	0	0	0	321	633	0	954	223	1220	0	1443	2787
% Pass Cars	0	99.0	0	99.0	0	0	0	0	98.8	100	0	99.6	98.2	99.3	0	99.2	99.3
Single Units	0	3	0	3	0	0	0	0	3	0	0	3	3	7	0	10	16
% Single Units	0	0.8	0	0.8	0	0	0	0	0.9	0	0	0.3	1.3	0.6	0	0.7	0.6
Heavy Trucks	0	1	0	1	0	0	0	0	1	0	0	1	1	1	0	2	4
% Heavy Trucks	0	0.3	0	0.3	0	0	0	0	0.3	0	0	0.1	0.4	0.1	0	0.1	0.1
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4PU SW

File Name : TMC_11 26 Mile& Jewell_2-5-19
Site Code : TMC_11
Start Date : 2/5/2019
Page No : 1

4 Hour video traffic study was conducted during typical weekday (Tuesday) from 7:00 AM - 9:00 AM morning & 4:00 PM - 6:00 PM afternoon peak hours, while school was in session.

Groups Printed- Pass Cars - Single Units - Heavy Trucks - Peds

	Jewell Road Southbound					26 Mile Road Westbound					Jewell Road Northbound					26 Mile Road Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	45	28	15	0	88	7	225	20	0	252	9	4	6	0	19	6	86	9	0	101	460
07:15 AM	47	29	18	0	94	7	190	28	0	225	4	9	7	0	20	10	99	10	0	119	458
07:30 AM	45	38	28	0	111	7	196	30	0	233	4	7	11	0	22	10	110	11	0	131	497
07:45 AM	48	24	13	0	85	12	196	26	0	234	7	7	9	0	23	23	107	15	0	145	487
Total	185	119	74	0	378	33	807	104	0	944	24	27	33	0	84	49	402	45	0	496	1902
08:00 AM	49	32	14	0	95	7	200	18	0	225	8	8	8	0	24	13	97	11	0	121	465
08:15 AM	34	19	16	0	69	8	165	17	0	190	2	9	7	0	18	16	101	16	0	133	410
08:30 AM	41	18	22	0	81	7	161	15	0	183	10	5	15	0	30	7	104	9	0	120	414
08:45 AM	34	33	24	0	91	7	146	6	0	159	5	11	9	0	25	11	93	10	0	114	389
Total	158	102	76	0	336	29	672	56	0	757	25	33	39	0	97	47	395	46	0	488	1678
*** BREAK ***																					
04:00 PM	29	21	13	0	63	22	132	12	0	166	17	23	15	0	55	38	237	34	0	309	593
04:15 PM	32	14	12	0	58	15	175	12	0	202	22	22	25	0	69	14	233	40	0	287	616
04:30 PM	24	16	15	0	55	14	143	12	0	169	19	26	18	0	63	22	234	51	0	307	594
04:45 PM	25	19	14	0	58	19	168	14	0	201	19	38	11	0	68	18	265	40	0	323	650
Total	110	70	54	0	234	70	618	50	0	738	77	109	69	0	255	92	969	165	0	1226	2453
05:00 PM	28	15	15	0	58	19	169	11	0	199	12	34	17	0	63	12	273	41	0	326	646
05:15 PM	27	17	11	0	55	14	154	20	0	188	15	36	13	0	64	14	267	56	0	337	644
05:30 PM	28	26	10	0	64	17	155	10	0	182	13	36	19	0	68	15	224	39	0	278	592
05:45 PM	29	23	9	0	61	21	156	4	0	181	10	29	8	0	47	21	206	48	0	275	564
Total	112	81	45	0	238	71	634	45	0	750	50	135	57	0	242	62	970	184	0	1216	2446
Grand Total	565	372	249	0	1186	203	2731	255	0	3189	176	304	198	0	678	250	2736	440	0	3426	8479
Apprch %	47.6	31.4	21	0		6.4	85.6	8	0		26	44.8	29.2	0		7.3	79.9	12.8	0		
Total %	6.7	4.4	2.9	0	14	2.4	32.2	3	0	37.6	2.1	3.6	2.3	0	8	2.9	32.3	5.2	0	40.4	
Pass Cars	549	368	245	0	1162	198	2654	253	0	3105	171	303	195	0	669	244	2664	431	0	3339	8275
% Pass Cars	97.2	98.9	98.4	0	98	97.5	97.2	99.2	0	97.4	97.2	99.7	98.5	0	98.7	97.6	97.4	98	0	97.5	97.6
Single Units	16	3	3	0	22	4	65	2	0	71	4	1	3	0	8	6	55	9	0	70	171
% Single Units	2.8	0.8	1.2	0	1.9	2	2.4	0.8	0	2.2	2.3	0.3	1.5	0	1.2	2.4	2	2	0	2	2
Heavy Trucks	0	1	1	0	2	1	12	0	0	13	1	0	0	0	1	0	17	0	0	17	33
% Heavy Trucks	0	0.3	0.4	0	0.2	0.5	0.4	0	0	0.4	0.6	0	0	0	0.1	0	0.6	0	0	0.5	0.4
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TDC Traffic Comments: Signalized intersection with push button ped. signals for all quadrants. Video VCU camera was located within SW intersection quadrant. Note: Peds. are excluded from peak hour reports. Traffic study was performed for Washington Twp. Traffic Study for Bergmann.

Traffic Data Collection, LLC

www:tdccounts.com

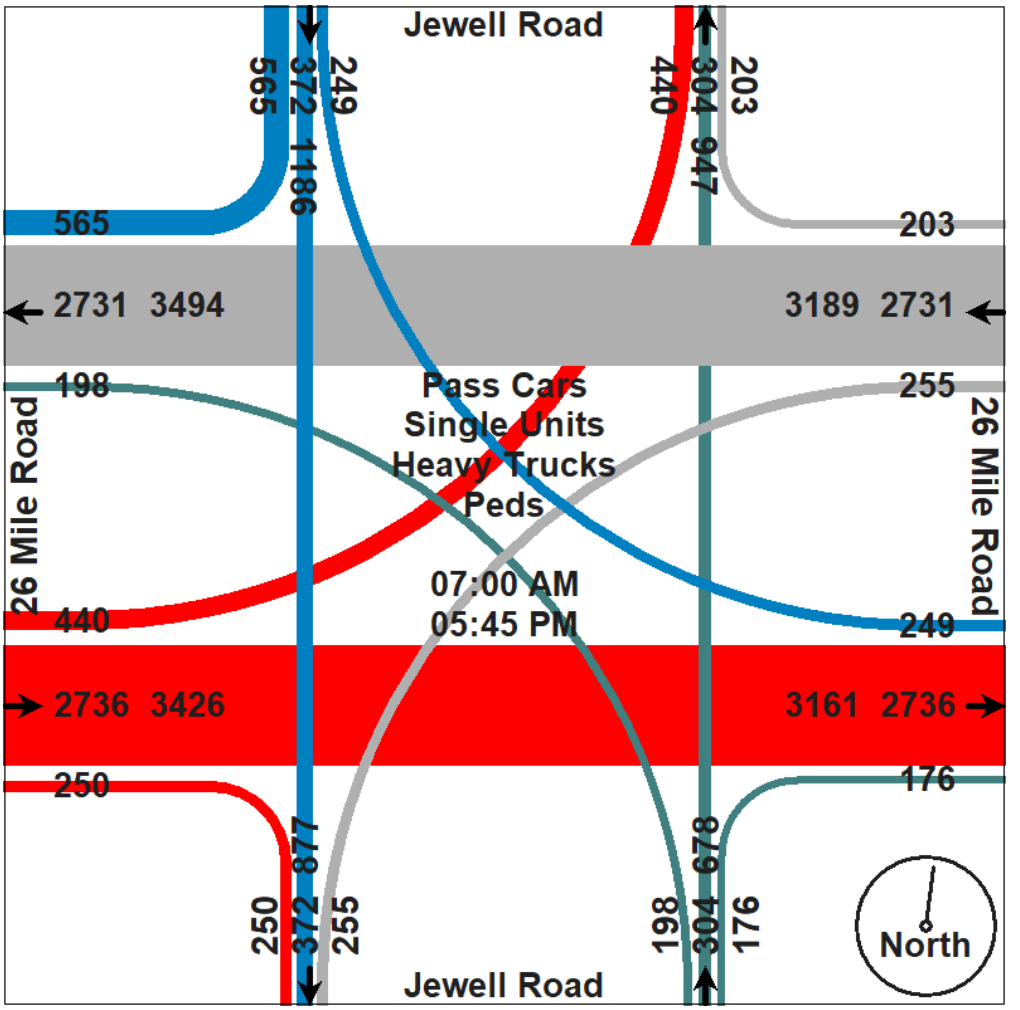
Phone: 586.786-5407

Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4PU SW

File Name : TMC_11 26 Mile& Jewell_2-5-19
Site Code : TMC_11
Start Date : 2/5/2019
Page No : 2



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Phone: 586.786-5407

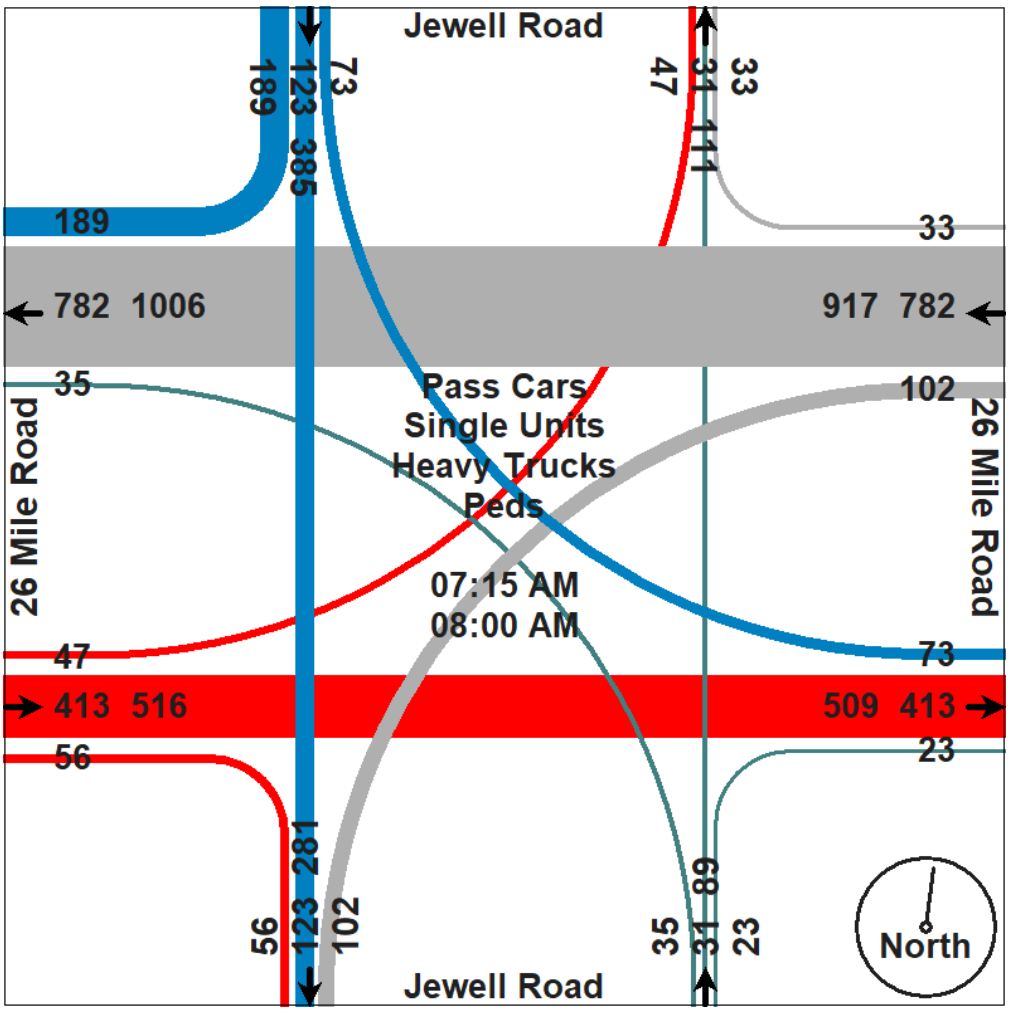
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4PU SW

File Name : TMC_11 26 Mile& Jewell_2-5-19
Site Code : TMC_11
Start Date : 2/5/2019
Page No : 3

	Jewell Road Southbound				26 Mile Road Westbound				Jewell Road Northbound				26 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	47	29	18	94	7	190	28	225	4	**9**	7	20	10	99	10	119	458
07:30 AM	45	**38**	**28**	**111**	7	196	**30**	233	4	7	**11**	22	10	**110**	11	131	**497**
07:45 AM	48	24	13	85	**12**	196	26	**234**	7	7	9	23	**23**	107	**15**	**145**	487
08:00 AM	**49**	32	14	95	7	**200**	18	225	**8**	8	8	**24**	13	97	11	121	465
Total Volume	189	123	73	385	33	782	102	917	23	31	35	89	56	413	47	516	1907
% App. Total	49.1	31.9	19		3.6	85.3	11.1		25.8	34.8	39.3		10.9	80	9.1		
PHF	.964	.809	.652	.867	.688	.978	.850	.980	.719	.861	.795	.927	.609	.939	.783	.890	.959
Pass Cars	185	123	73	381	31	759	100	890	22	31	35	88	54	391	45	490	1849
% Pass Cars	97.9	100	100	99.0	93.9	97.1	98.0	97.1	95.7	100	100	98.9	96.4	94.7	95.7	95.0	97.0
Single Units	4	0	0	4	2	18	2	22	1	0	0	1	2	19	2	23	50
% Single Units	2.1	0	0	1.0	6.1	2.3	2.0	2.4	4.3	0	0	1.1	3.6	4.6	4.3	4.5	2.6
Heavy Trucks	0	0	0	0	0	5	0	5	0	0	0	0	0	3	0	3	8
% Heavy Trucks	0	0	0	0	0	0.6	0	0.5	0	0	0	0	0	0.7	0	0.6	0.4
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Traffic Data Collection, LLC

www:tdccounts.com

Phone: 586.786-5407

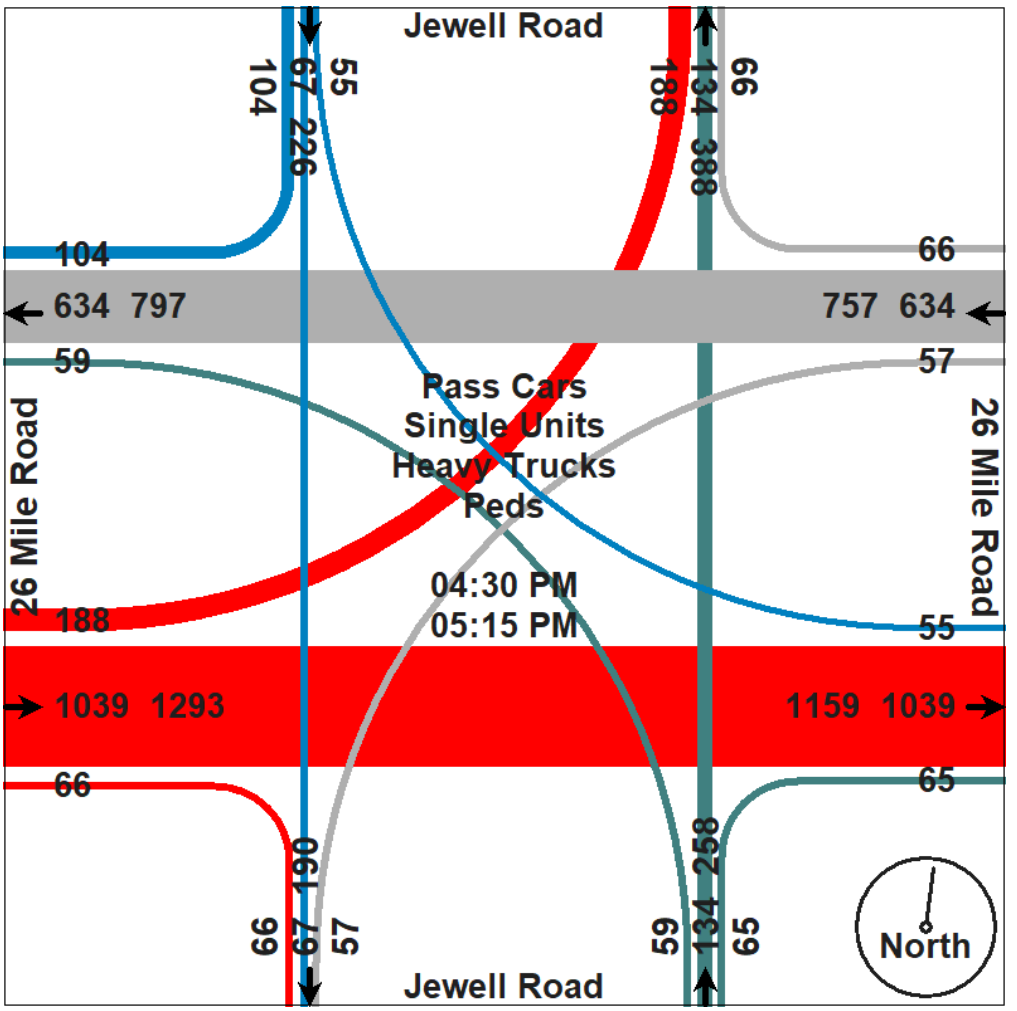
Traffic Study Performed For:

Bergmann

Project: Washington Twp. Traffic Study
Study:4 Hr. Video Turning Movement Count
Weather: Cldy, Dry Deg's 30's
Count By Miovision Video VCU 4PU SW

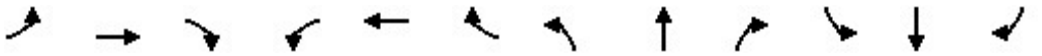
File Name : TMC_11 26 Mile& Jewell_2-5-19
Site Code : TMC_11
Start Date : 2/5/2019
Page No : 4

	Jewell Road Southbound				26 Mile Road Westbound				Jewell Road Northbound				26 Mile Road Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	24	16	**15**	55	14	143	12	169	**19**	26	**18**	63	**22**	234	51	307	594
04:45 PM	25	**19**	14	**58**	**19**	168	14	**201**	19	**38**	11	**68**	18	265	40	323	**650**
05:00 PM	**28**	15	15	58	19	**169**	11	199	12	34	17	63	12	**273**	41	326	646
05:15 PM	27	17	11	55	14	154	**20**	188	15	36	13	64	14	267	**56**	**337**	644
Total Volume	104	67	55	226	66	634	57	757	65	134	59	258	66	1039	188	1293	2534
% App. Total	46	29.6	24.3		8.7	83.8	7.5		25.2	51.9	22.9		5.1	80.4	14.5		
PHF	.929	.882	.917	.974	.868	.938	.713	.942	.855	.882	.819	.949	.750	.951	.839	.959	.975
Pass Cars	103	66	52	221	66	622	57	745	65	134	59	258	66	1033	187	1286	2510
% Pass Cars	99.0	98.5	94.5	97.8	100	98.1	100	98.4	100	100	100	100	100	99.4	99.5	99.5	99.1
Single Units	1	0	2	3	0	10	0	10	0	0	0	0	0	3	1	4	17
% Single Units	1.0	0	3.6	1.3	0	1.6	0	1.3	0	0	0	0	0	0.3	0.5	0.3	0.7
Heavy Trucks	0	1	1	2	0	2	0	2	0	0	0	0	0	3	0	3	7
% Heavy Trucks	0	1.5	1.8	0.9	0	0.3	0	0.3	0	0	0	0	0	0.3	0	0.2	0.3
Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Peds	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Appendix B

Existing Conditions Data



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	75	62	72	79	174	21	215	35	101	243	48
Future Volume (veh/h)	79	75	62	72	79	174	21	215	35	101	243	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1767	1767	1767	1841	1841	1841
Adj Flow Rate, veh/h	103	97	81	78	86	189	29	295	48	126	304	60
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.73	0.73	0.73	0.80	0.80	0.80
Percent Heavy Veh, %	4	4	4	4	4	4	9	9	9	4	4	4
Cap, veh/h	129	116	97	234	97	213	628	341	289	749	344	68
Arrive On Green	0.04	0.13	0.13	0.09	0.19	0.19	0.34	0.19	0.19	0.38	0.23	0.23
Sat Flow, veh/h	1753	927	774	1753	512	1126	1682	1767	1497	1753	1493	295
Grp Volume(v), veh/h	103	0	178	78	0	275	29	295	48	126	0	364
Grp Sat Flow(s),veh/h/ln	1753	0	1701	1753	0	1638	1682	1767	1497	1753	0	1788
Q Serve(g_s), s	2.8	0.0	12.3	0.2	0.0	19.6	0.0	19.4	3.2	0.0	0.0	23.6
Cycle Q Clear(g_c), s	2.8	0.0	12.3	0.2	0.0	19.6	0.0	19.4	3.2	0.0	0.0	23.6
Prop In Lane	1.00		0.46	1.00		0.69	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	129	0	213	234	0	310	628	341	289	749	0	412
V/C Ratio(X)	0.80	0.00	0.83	0.33	0.00	0.89	0.05	0.86	0.17	0.17	0.00	0.88
Avail Cap(c_a), veh/h	143	0	449	234	0	446	628	760	644	749	0	769
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	51.3	49.1	0.0	47.4	26.3	46.9	40.4	23.0	0.0	44.6
Incr Delay (d2), s/veh	24.7	0.0	8.3	0.8	0.0	14.1	0.0	24.2	1.2	0.1	0.0	23.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	5.6	2.1	0.0	9.0	0.5	10.5	1.3	2.2	0.0	12.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	0.0	59.5	50.0	0.0	61.5	26.3	71.1	41.6	23.1	0.0	67.7
LnGrp LOS	F	A	E	D	A	E	C	E	D	C	A	E
Approach Vol, veh/h		281			353			372			490	
Approach Delay, s/veh		67.3			58.9			63.8			56.2	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.4	29.6	17.7	21.3	46.9	34.1	11.0	28.0
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.6	51.6	6.7	* 32	5.6	51.6	5.7	32.7
Max Q Clear Time (g_c+I1), s	2.0	21.4	2.2	14.3	2.0	25.6	4.8	21.6
Green Ext Time (p_c), s	0.1	1.8	0.0	0.8	0.0	2.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	60.8
HCM 6th LOS	E

Notes

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

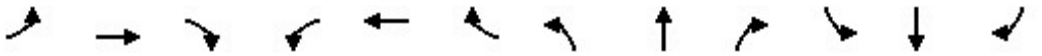
Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	121	139	57	224	86	36
Future Vol, veh/h	121	139	57	224	86	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	60	60
Heavy Vehicles, %	3	3	1	1	3	3
Mvmt Flow	149	172	66	260	143	60

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	321	0	541	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	-	-	4.11	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1245	-	500	895
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1245	-	469	895
Mov Cap-2 Maneuver	-	-	-	-	469	-
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	469	895	-	-	1245	-
HCM Lane V/C Ratio	0.306	0.067	-	-	0.053	-
HCM Control Delay (s)	16	9.3	-	-	8.1	0
HCM Lane LOS	C	A	-	-	A	A
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	75	325	41	32	16	59	203	23	17	324	26
Future Volume (veh/h)	46	75	325	41	32	16	59	203	23	17	324	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1781	1781	1781	1856	1856	1856
Adj Flow Rate, veh/h	50	82	353	46	36	18	65	223	25	18	345	28
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.91	0.91	0.91	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	8	8	8	3	3	3
Cap, veh/h	458	91	390	127	350	175	502	857	96	618	923	75
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1361	310	1335	969	1195	597	961	1573	176	1123	1693	137
Grp Volume(v), veh/h	50	0	435	46	0	54	65	0	248	18	0	373
Grp Sat Flow(s),veh/h/ln	1361	0	1645	969	0	1792	961	0	1750	1123	0	1831
Q Serve(g_s), s	2.2	0.0	20.3	3.1	0.0	1.8	3.3	0.0	6.0	0.7	0.0	9.3
Cycle Q Clear(g_c), s	4.0	0.0	20.3	23.4	0.0	1.8	12.6	0.0	6.0	6.7	0.0	9.3
Prop In Lane	1.00		0.81	1.00		0.33	1.00		0.10	1.00		0.08
Lane Grp Cap(c), veh/h	458	0	481	127	0	524	502	0	954	618	0	998
V/C Ratio(X)	0.11	0.00	0.90	0.36	0.00	0.10	0.13	0.00	0.26	0.03	0.00	0.37
Avail Cap(c_a), veh/h	458	0	481	127	0	524	502	0	954	618	0	998
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	0.0	27.2	38.8	0.0	20.6	14.0	0.0	9.6	11.4	0.0	10.4
Incr Delay (d2), s/veh	0.1	0.0	20.4	1.7	0.0	0.1	0.5	0.0	0.7	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	9.9	0.9	0.0	0.7	0.7	0.0	2.1	0.2	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	0.0	47.6	40.5	0.0	20.7	14.5	0.0	10.3	11.5	0.0	11.5
LnGrp LOS	C	A	D	D	A	C	B	A	B	B	A	B
Approach Vol, veh/h		485			100			313			391	
Approach Delay, s/veh		45.0			29.8			11.2			11.5	
Approach LOS		D			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0		30.0				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 44		* 23		* 44		* 23				
Max Q Clear Time (g_c+I1), s		14.6		22.3		11.3		25.4				
Green Ext Time (p_c), s		1.7		0.3		2.2		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.4									
HCM 6th LOS			C									

Notes

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

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	7	66	11	26	13	22	130	1	4	122	62
Future Vol, veh/h	54	7	66	11	26	13	22	130	1	4	122	62
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.72	0.72	0.72	0.60	0.60	0.60
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	3	3	3
Mvmt Flow	64	8	79	14	33	17	31	181	1	7	203	103
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	9.4	9.3	11	9.8
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	14%	0%	89%	0%	30%	0%	3%	0%
Vol Thru, %	86%	0%	11%	0%	70%	0%	97%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	152	1	61	66	37	13	126	62
LT Vol	22	0	54	0	11	0	4	0
Through Vol	130	0	7	0	26	0	122	0
RT Vol	0	1	0	66	0	13	0	62
Lane Flow Rate	211	1	73	79	47	17	210	103
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.324	0.002	0.128	0.114	0.083	0.025	0.314	0.134
Departure Headway (Hd)	5.532	4.754	6.356	5.202	6.328	5.468	5.383	4.662
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	644	744	559	681	570	659	664	762
Service Time	3.316	2.537	4.15	2.995	4.028	3.168	3.159	2.438
HCM Lane V/C Ratio	0.328	0.001	0.131	0.116	0.082	0.026	0.316	0.135
HCM Control Delay	11	7.5	10.1	8.7	9.6	8.3	10.6	8.2
HCM Lane LOS	B	A	B	A	A	A	B	A
HCM 95th-tile Q	1.4	0	0.4	0.4	0.3	0.1	1.3	0.5

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	25	211	113	154	195	11
Future Vol, veh/h	25	211	113	154	195	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	78	78	82	82
Heavy Vehicles, %	2	2	10	10	6	6
Mvmt Flow	29	243	145	197	238	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	732	245	251	0	-	0
Stage 1	245	-	-	-	-	-
Stage 2	487	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	388	794	1269	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	344	794	1269	-	-	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	705	-	-	-	-	-
Stage 2	618	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	3.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1269	-	719	-	-
HCM Lane V/C Ratio	0.114	-	0.377	-	-
HCM Control Delay (s)	8.2	-	13	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.8	-	-

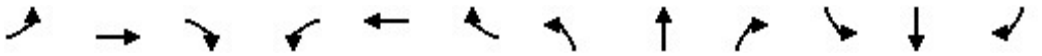
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	124	69	216	67	64	353
Future Volume (veh/h)	124	69	216	67	64	353
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1767	1767	1856	1856
Adj Flow Rate, veh/h	157	87	273	85	84	464
Peak Hour Factor	0.79	0.79	0.79	0.79	0.76	0.76
Percent Heavy Veh, %	2	2	9	9	3	3
Cap, veh/h	190	169	300	93	1004	1488
Arrive On Green	0.11	0.11	0.46	0.46	0.52	0.80
Sat Flow, veh/h	1781	1585	1292	402	1767	1856
Grp Volume(v), veh/h	157	87	0	358	84	464
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1694	1767	1856
Q Serve(g_s), s	10.4	6.2	0.0	23.5	0.0	7.9
Cycle Q Clear(g_c), s	10.4	6.2	0.0	23.5	0.0	7.9
Prop In Lane	1.00	1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	190	169	0	393	1004	1488
V/C Ratio(X)	0.83	0.52	0.00	0.91	0.08	0.31
Avail Cap(c_a), veh/h	306	272	0	1050	1004	1488
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	50.7	0.0	31.0	13.4	3.1
Incr Delay (d2), s/veh	9.6	2.4	0.0	27.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	5.6	0.0	10.0	1.1	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.1	53.1	0.0	58.7	13.4	3.7
LnGrp LOS	E	D	A	E	B	A
Approach Vol, veh/h	244		358			548
Approach Delay, s/veh	58.9		58.7			5.2
Approach LOS	E		E			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		101.8		18.2	68.4	33.4
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 88		* 21	* 8.4	* 74
Max Q Clear Time (g_c+I1), s		9.9		12.4	2.0	25.5
Green Ext Time (p_c), s		3.0		0.4	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	33.2
HCM 6th LOS	C

Notes

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



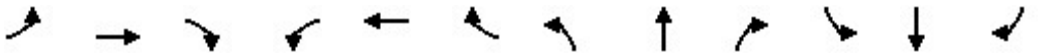
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	42	48	48	67	17	28	99	6	36	183	30
Future Volume (veh/h)	31	42	48	48	67	17	28	99	6	36	183	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	38	51	59	61	85	22	42	148	9	49	251	41
Peak Hour Factor	0.82	0.82	0.82	0.79	0.79	0.79	0.67	0.67	0.67	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	226	143	133	274	199	44	229	530	28	204	511	77
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	286	709	659	453	984	216	183	1449	77	139	1397	210
Grp Volume(v), veh/h	148	0	0	168	0	0	199	0	0	341	0	0
Grp Sat Flow(s),veh/h/ln	1654	0	0	1653	0	0	1710	0	0	1746	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.0	0.0	0.0	2.2	0.0	0.0	2.1	0.0	0.0	3.9	0.0	0.0
Prop In Lane	0.26		0.40	0.36		0.13	0.21		0.05	0.14		0.12
Lane Grp Cap(c), veh/h	503	0	0	517	0	0	788	0	0	792	0	0
V/C Ratio(X)	0.29	0.00	0.00	0.32	0.00	0.00	0.25	0.00	0.00	0.43	0.00	0.00
Avail Cap(c_a), veh/h	1591	0	0	1595	0	0	1668	0	0	1710	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	0.0	9.4	0.0	0.0	6.1	0.0	0.0	6.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.7	0.0	0.0	9.8	0.0	0.0	6.2	0.0	0.0	7.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		148			168			199			341	
Approach Delay, s/veh		9.7			9.8			6.2			7.0	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.4		11.4		15.4		11.4				
Change Period (Y+Rc), s		* 5.6		* 6		* 5.6		* 6				
Max Green Setting (Gmax), s		* 24		* 24		* 25		* 24				
Max Q Clear Time (g_c+I1), s		5.9		4.2		4.1		4.0				
Green Ext Time (p_c), s		2.0		0.8		1.0		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			7.8									
HCM 6th LOS			A									

Notes

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



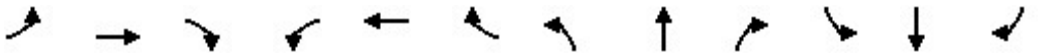
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	104	0	0	0	54	272	0	0	454	30
Future Volume (veh/h)	41	0	104	0	0	0	54	272	0	0	454	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	0	1856	1856	1856
Adj Flow Rate, veh/h	61	0	155	0	0	0	82	412	0	0	554	37
Peak Hour Factor	0.67	0.67	0.67	0.92	0.92	0.92	0.66	0.66	0.66	0.82	0.82	0.82
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	0	3	3	3
Cap, veh/h	225	0	185	0	223	0	678	1399	0	60	1446	1225
Arrive On Green	0.12	0.00	0.12	0.00	0.00	0.00	0.78	0.78	0.00	0.00	1.00	1.00
Sat Flow, veh/h	1384	0	1547	0	1870	0	793	1796	0	966	1856	1572
Grp Volume(v), veh/h	61	0	155	0	0	0	82	412	0	0	554	37
Grp Sat Flow(s),veh/h/ln	1384	0	1547	0	1870	0	793	1796	0	966	1856	1572
Q Serve(g_s), s	4.9	0.0	11.8	0.0	0.0	0.0	3.1	7.9	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	11.8	0.0	0.0	0.0	3.1	7.9	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	225	0	185	0	223	0	678	1399	0	60	1446	1225
V/C Ratio(X)	0.27	0.00	0.84	0.00	0.00	0.00	0.12	0.29	0.00	0.00	0.38	0.03
Avail Cap(c_a), veh/h	338	0	311	0	376	0	678	1399	0	60	1446	1225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.7	0.0	51.7	0.0	0.0	0.0	3.3	3.8	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	9.7	0.0	0.0	0.0	0.4	0.5	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	5.1	0.0	0.0	0.0	0.5	2.5	0.0	0.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	0.0	61.4	0.0	0.0	0.0	3.6	4.3	0.0	0.0	0.8	0.0
LnGrp LOS	D	A	E	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		216			0			494			591	
Approach Delay, s/veh		58.0			0.0			4.2			0.7	
Approach LOS		E						A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		99.8		20.2		99.8		20.2				
Change Period (Y+Rc), s		6.3		* 5.9		6.3		* 5.9				
Max Green Setting (Gmax), s		83.7		* 24		83.7		* 24				
Max Q Clear Time (g_c+I1), s		9.9		13.8		2.0		0.0				
Green Ext Time (p_c), s		3.4		0.6		3.9		0.0				

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

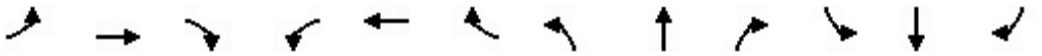
Notes

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



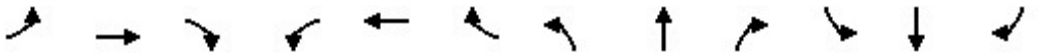
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	957	115	0	232	0	0	375	215
Future Volume (vph)	0	0	0	0	957	115	0	232	0	0	375	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5			5.3			7.8	7.8
Lane Util. Factor					0.91			0.95			0.95	1.00
Frt					0.98			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					4955			3505			3539	1583
Flt Permitted					1.00			1.00			1.00	1.00
Satd. Flow (perm)					4955			3505			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	1007	121	0	273	0	0	417	239
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	0	0	0	1110	0	0	273	0	0	417	202
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Turn Type					NA			NA			NA	Perm
Protected Phases					4			2			6	
Permitted Phases												6
Actuated Green, G (s)					37.0			71.2			68.7	68.7
Effective Green, g (s)					37.0			71.2			68.7	68.7
Actuated g/C Ratio					0.31			0.59			0.57	0.57
Clearance Time (s)					6.5			5.3			7.8	7.8
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					1527			2079			2026	906
v/s Ratio Prot					c0.22			0.08			0.12	
v/s Ratio Perm												c0.13
v/c Ratio					0.73			0.13			0.21	0.22
Uniform Delay, d1					37.0			10.8			12.4	12.6
Progression Factor					1.42			0.00			0.89	0.86
Incremental Delay, d2					1.7			0.1			0.2	0.5
Delay (s)					54.3			0.1			11.3	11.3
Level of Service					D			A			B	B
Approach Delay (s)		0.0			54.3			0.1			11.3	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	772	137	0	0	0	0	232	157	0	375	0
Future Volume (vph)	0	772	137	0	0	0	0	232	157	0	375	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						7.8	7.8		5.3	
Lane Util. Factor		0.91						0.95	1.00		0.95	
Frt		0.98						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		4971						3471	1553		3539	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		4971						3471	1553		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	0	813	144	0	0	0	0	305	207	0	536	0
RTOR Reduction (vph)	0	30	0	0	0	0	0	0	62	0	0	0
Lane Group Flow (vph)	0	927	0	0	0	0	0	305	145	0	536	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type		NA						NA	Perm		NA	
Protected Phases		8						6			2	
Permitted Phases									6			
Actuated Green, G (s)		37.0						68.7	68.7		71.2	
Effective Green, g (s)		37.0						68.7	68.7		71.2	
Actuated g/C Ratio		0.31						0.57	0.57		0.59	
Clearance Time (s)		6.5						7.8	7.8		5.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		1532						1987	889		2099	
v/s Ratio Prot		c0.19						0.09			c0.15	
v/s Ratio Perm									0.09			
v/c Ratio		0.60						0.15	0.16		0.26	
Uniform Delay, d1		35.3						12.0	12.1		11.7	
Progression Factor		1.00						1.00	1.00		0.23	
Incremental Delay, d2		0.7						0.2	0.4		0.3	
Delay (s)		36.0						12.2	12.5		3.0	
Level of Service		D						B	B		A	
Approach Delay (s)		36.0			0.0			12.3			3.0	
Approach LOS		D			A			B			A	

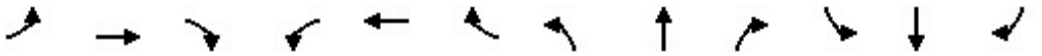
Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	413	56	102	782	33	35	31	23	73	123	189
Future Volume (veh/h)	47	413	56	102	782	33	35	31	23	73	123	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	53	464	63	107	823	35	38	33	25	84	141	217
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	3	3	3	1	1	1	1	1	1
Cap, veh/h	184	711	603	218	1342	57	518	915	776	706	915	776
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	628	1826	1547	869	3445	147	1032	1885	1598	1356	1885	1598
Grp Volume(v), veh/h	53	464	63	107	421	437	38	33	25	84	141	217
Grp Sat Flow(s),veh/h/ln	628	1826	1547	869	1763	1829	1032	1885	1598	1356	1885	1598
Q Serve(g_s), s	8.9	25.0	3.1	13.8	23.0	23.0	2.6	1.1	1.0	4.1	5.0	9.7
Cycle Q Clear(g_c), s	31.9	25.0	3.1	38.8	23.0	23.0	7.5	1.1	1.0	5.2	5.0	9.7
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	184	711	603	218	686	712	518	915	776	706	915	776
V/C Ratio(X)	0.29	0.65	0.10	0.49	0.61	0.61	0.07	0.04	0.03	0.12	0.15	0.28
Avail Cap(c_a), veh/h	319	1103	935	404	1065	1105	518	915	776	706	915	776
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	30.0	23.3	45.9	29.4	29.4	19.3	16.2	16.1	17.5	17.2	18.4
Incr Delay (d2), s/veh	0.8	1.0	0.1	1.7	0.9	0.9	0.3	0.1	0.1	0.3	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	10.5	1.1	3.0	9.3	9.7	0.6	0.5	0.4	1.3	2.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.0	31.0	23.4	47.6	30.3	30.3	19.5	16.2	16.2	17.9	17.5	19.3
LnGrp LOS	D	C	C	D	C	C	B	B	B	B	B	B
Approach Vol, veh/h		580			965			96			442	
Approach Delay, s/veh		31.3			32.2			17.5			18.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		65.8		54.2		65.8		54.2				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		32.5		72.5		32.5		72.5				
Max Q Clear Time (g_c+I1), s		9.5		33.9		11.7		40.8				
Green Ext Time (p_c), s		0.3		3.5		1.6		6.0				

Intersection Summary												
HCM 6th Ctrl Delay			28.3									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	91	24	40	88	151	73	412	95	166	362	113
Future Volume (veh/h)	113	91	24	40	88	151	73	412	95	166	362	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	141	114	30	47	104	178	84	474	109	182	398	124
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.87	0.87	0.87	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	145	143	38	295	117	200	503	533	452	596	438	137
Arrive On Green	0.05	0.10	0.10	0.13	0.19	0.19	0.24	0.28	0.28	0.28	0.32	0.32
Sat Flow, veh/h	1795	1438	379	1795	624	1069	1795	1885	1598	1795	1378	429
Grp Volume(v), veh/h	141	0	144	47	0	282	84	474	109	182	0	522
Grp Sat Flow(s),veh/h/ln	1795	0	1817	1795	0	1693	1795	1885	1598	1795	0	1808
Q Serve(g_s), s	5.4	0.0	9.3	0.0	0.0	19.5	0.0	28.9	6.3	2.7	0.0	33.2
Cycle Q Clear(g_c), s	5.4	0.0	9.3	0.0	0.0	19.5	0.0	28.9	6.3	2.7	0.0	33.2
Prop In Lane	1.00		0.21	1.00		0.63	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	145	0	180	295	0	317	503	533	452	596	0	575
V/C Ratio(X)	0.97	0.00	0.80	0.16	0.00	0.89	0.17	0.89	0.24	0.31	0.00	0.91
Avail Cap(c_a), veh/h	145	0	450	295	0	433	503	842	714	596	0	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	52.9	45.6	0.0	47.5	34.3	41.2	33.1	31.0	0.0	39.2
Incr Delay (d2), s/veh	65.5	0.0	7.9	0.2	0.0	15.6	0.2	19.5	1.3	0.3	0.0	20.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	4.5	1.2	0.0	9.3	1.8	15.8	2.5	3.8	0.0	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	121.4	0.0	60.8	45.9	0.0	63.2	34.4	60.7	34.4	31.3	0.0	59.9
LnGrp LOS	F	A	E	D	A	E	C	E	C	C	A	E
Approach Vol, veh/h		285			329			667			704	
Approach Delay, s/veh		90.8			60.7			53.1			52.5	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.9	40.3	21.6	18.2	35.6	44.6	12.0	27.8
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.6	53.6	6.7	* 30	5.6	53.6	5.7	30.7
Max Q Clear Time (g_c+I1), s	4.7	30.9	2.0	11.3	2.0	35.2	7.4	21.5
Green Ext Time (p_c), s	0.0	3.0	0.0	0.6	0.0	2.9	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	59.5
HCM 6th LOS	E

Notes

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

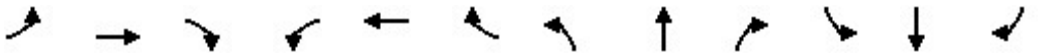
Intersection	
Int Delay, s/veh	3.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	285	66	31	194	79	82
Future Vol, veh/h	285	66	31	194	79	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	83	83	76	76
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	324	75	37	234	104	108

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	399	0	632	324
Stage 1	-	-	-	-	324	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1165	-	448	722
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	750	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1165	-	432	722
Mov Cap-2 Maneuver	-	-	-	-	432	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	750	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	432	722	-	-	1165	-
HCM Lane V/C Ratio	0.241	0.149	-	-	0.032	-
HCM Control Delay (s)	16	10.9	-	-	8.2	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	0.5	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	49	121	18	44	20	267	468	44	33	331	65
Future Volume (veh/h)	70	49	121	18	44	20	267	468	44	33	331	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	84	59	146	20	49	22	281	493	46	38	376	74
Peak Hour Factor	0.83	0.83	0.83	0.89	0.89	0.89	0.95	0.95	0.95	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	260	77	192	142	200	90	630	1147	107	564	1033	203
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1329	477	1181	1186	1232	553	948	1698	158	873	1530	301
Grp Volume(v), veh/h	84	0	205	20	0	71	281	0	539	38	0	450
Grp Sat Flow(s),veh/h/ln	1329	0	1658	1186	0	1786	948	0	1857	873	0	1831
Q Serve(g_s), s	4.7	0.0	9.5	1.3	0.0	2.8	14.5	0.0	10.6	1.7	0.0	8.5
Cycle Q Clear(g_c), s	7.5	0.0	9.5	10.8	0.0	2.8	23.0	0.0	10.6	12.3	0.0	8.5
Prop In Lane	1.00		0.71	1.00		0.31	1.00		0.09	1.00		0.16
Lane Grp Cap(c), veh/h	260	0	269	142	0	290	630	0	1254	564	0	1236
V/C Ratio(X)	0.32	0.00	0.76	0.14	0.00	0.25	0.45	0.00	0.43	0.07	0.00	0.36
Avail Cap(c_a), veh/h	433	0	485	297	0	522	630	0	1254	564	0	1236
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.5	0.0	32.0	37.2	0.0	29.2	10.5	0.0	5.9	8.8	0.0	5.6
Incr Delay (d2), s/veh	0.7	0.0	4.5	0.4	0.0	0.4	2.3	0.0	1.1	0.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.9	0.4	0.0	1.1	2.8	0.0	3.1	0.3	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	36.5	37.6	0.0	29.7	12.8	0.0	7.0	9.0	0.0	6.4
LnGrp LOS	C	A	D	D	A	C	B	A	A	A	A	A
Approach Vol, veh/h		289			91			820			488	
Approach Delay, s/veh		35.5			31.4			9.0			6.6	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.4		19.6		60.4		19.6				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 44		* 23		* 44		* 23				
Max Q Clear Time (g_c+I1), s		25.0		11.5		14.3		12.8				
Green Ext Time (p_c), s		4.5		1.0		2.9		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									

Notes

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

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	27	68	8	24	5	45	141	25	7	85	12
Future Vol, veh/h	27	27	68	8	24	5	45	141	25	7	85	12
Peak Hour Factor	0.87	0.87	0.87	0.77	0.77	0.77	0.80	0.80	0.80	0.77	0.77	0.77
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	31	31	78	10	31	6	56	176	31	9	110	16
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	8.6	8.8	10.3	9
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	24%	0%	50%	0%	25%	0%	8%	0%
Vol Thru, %	76%	0%	50%	0%	75%	0%	92%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	186	25	54	68	32	5	92	12
LT Vol	45	0	27	0	8	0	7	0
Through Vol	141	0	27	0	24	0	85	0
RT Vol	0	25	0	68	0	5	0	12
Lane Flow Rate	232	31	62	78	42	6	119	16
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.338	0.038	0.1	0.105	0.067	0.009	0.175	0.02
Departure Headway (Hd)	5.237	4.412	5.807	4.85	5.81	4.978	5.282	4.539
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	686	808	615	735	614	715	676	784
Service Time	2.983	2.158	3.56	2.603	3.572	2.739	3.034	2.291
HCM Lane V/C Ratio	0.338	0.038	0.101	0.106	0.068	0.008	0.176	0.02
HCM Control Delay	10.7	7.3	9.2	8.2	9	7.8	9.2	7.4
HCM Lane LOS	B	A	A	A	A	A	A	A
HCM 95th-tile Q	1.5	0.1	0.3	0.4	0.2	0	0.6	0.1

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	176	323	302	250	26
Future Vol, veh/h	11	176	323	302	250	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	87	87	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	12	196	371	347	263	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1366	277	290	0	-	0
Stage 1	277	-	-	-	-	-
Stage 2	1089	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	162	762	1278	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	115	762	1278	-	-	-
Mov Cap-2 Maneuver	~ -134	-	-	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	323	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1278	-	1256	-	-
HCM Lane V/C Ratio	0.291	-	0.165	-	-
HCM Control Delay (s)	9	-	8.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	1.2	-	0.6	-	-

Notes

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

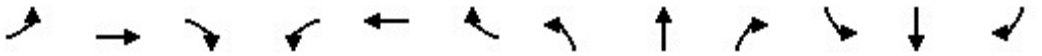
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	98	74	598	202	79	390
Future Volume (veh/h)	98	74	598	202	79	390
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	117	88	657	222	87	429
Peak Hour Factor	0.84	0.84	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	150	134	615	208	656	1555
Arrive On Green	0.08	0.08	0.91	0.91	0.32	0.82
Sat Flow, veh/h	1795	1598	1348	455	1795	1885
Grp Volume(v), veh/h	117	88	0	879	87	429
Grp Sat Flow(s),veh/h/ln	1795	1598	0	1803	1795	1885
Q Serve(g_s), s	7.7	6.4	0.0	54.8	0.0	6.2
Cycle Q Clear(g_c), s	7.7	6.4	0.0	54.8	0.0	6.2
Prop In Lane	1.00	1.00		0.25	1.00	
Lane Grp Cap(c), veh/h	150	134	0	823	656	1555
V/C Ratio(X)	0.78	0.66	0.00	1.07	0.13	0.28
Avail Cap(c_a), veh/h	293	261	0	1118	656	1555
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.9	53.3	0.0	5.2	27.3	2.4
Incr Delay (d2), s/veh	8.4	5.4	0.0	51.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	5.8	0.0	13.8	1.7	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	62.3	58.7	0.0	56.2	27.3	2.8
LnGrp LOS	E	E	A	F	C	A
Approach Vol, veh/h	205		879			516
Approach Delay, s/veh	60.8		56.2			7.0
Approach LOS	E		E			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		104.6		15.4	40.1	64.5
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 89		* 20	* 9.4	* 74
Max Q Clear Time (g_c+I1), s		8.2		9.7	2.0	56.8
Green Ext Time (p_c), s		2.7		0.4	0.0	6.1

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

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



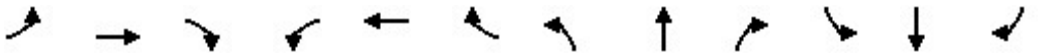
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	91	86	31	53	17	78	179	47	24	124	23
Future Volume (veh/h)	62	91	86	31	53	17	78	179	47	24	124	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	74	108	102	34	59	19	86	197	52	34	177	33
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.91	0.91	0.91	0.70	0.70	0.70
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	0	0	0
Cap, veh/h	236	194	153	238	293	75	254	385	89	184	484	82
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	309	757	598	295	1145	294	285	1124	259	123	1413	240
Grp Volume(v), veh/h	284	0	0	112	0	0	335	0	0	244	0	0
Grp Sat Flow(s),veh/h/ln	1664	0	0	1734	0	0	1668	0	0	1776	0	0
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	1.4	0.0	0.0	4.5	0.0	0.0	2.9	0.0	0.0
Prop In Lane	0.26		0.36	0.30		0.17	0.26		0.16	0.14		0.14
Lane Grp Cap(c), veh/h	583	0	0	607	0	0	728	0	0	750	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.18	0.00	0.00	0.46	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	1513	0	0	1507	0	0	1539	0	0	1604	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.6	0.0	0.0	8.5	0.0	0.0	7.7	0.0	0.0	7.2	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.3	0.0	0.0	0.8	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	0.0	0.0	8.7	0.0	0.0	8.1	0.0	0.0	7.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		284			112			335			244	
Approach Delay, s/veh		10.2			8.7			8.1			7.4	
Approach LOS		B			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.5		13.4		15.5		13.4				
Change Period (Y+Rc), s		* 5.6		* 6		* 5.6		* 6				
Max Green Setting (Gmax), s		* 24		* 24		* 25		* 24				
Max Q Clear Time (g_c+I1), s		4.9		3.4		6.5		6.3				
Green Ext Time (p_c), s		1.4		0.5		1.7		1.4				

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

Notes

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



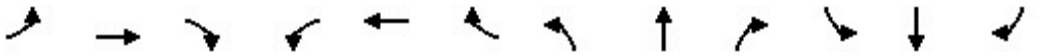
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	0	76	0	1	2	137	786	2	1	489	59
Future Volume (veh/h)	61	0	76	0	1	2	137	786	2	1	489	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	69	0	86	0	2	3	156	893	2	1	515	62
Peak Hour Factor	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	1	1	1
Cap, veh/h	159	0	115	0	50	75	756	1552	3	478	1556	1319
Arrive On Green	0.07	0.00	0.07	0.00	0.07	0.07	0.83	0.83	0.83	1.00	1.00	1.00
Sat Flow, veh/h	1359	0	1585	0	686	1029	843	1880	4	627	1885	1598
Grp Volume(v), veh/h	69	0	86	0	0	5	156	0	895	1	515	62
Grp Sat Flow(s),veh/h/ln	1359	0	1585	0	0	1715	843	0	1884	627	1885	1598
Q Serve(g_s), s	5.7	0.0	6.4	0.0	0.0	0.3	4.8	0.0	18.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.1	0.0	6.4	0.0	0.0	0.3	4.8	0.0	18.9	19.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.60	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	0	115	0	0	125	756	0	1556	478	1556	1319
V/C Ratio(X)	0.43	0.00	0.74	0.00	0.00	0.04	0.21	0.00	0.58	0.00	0.33	0.05
Avail Cap(c_a), veh/h	281	0	252	0	0	273	756	0	1556	478	1556	1319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	0.0	54.5	0.0	0.0	51.7	2.2	0.0	3.5	1.8	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	9.1	0.0	0.0	0.1	0.6	0.0	1.6	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	2.8	0.0	0.0	0.1	0.6	0.0	5.3	0.0	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	0.0	63.6	0.0	0.0	51.9	2.9	0.0	5.0	1.8	0.6	0.1
LnGrp LOS	E	A	E	A	A	D	A	A	A	A	A	A
Approach Vol, veh/h		155			5			1051			578	
Approach Delay, s/veh		60.4			51.9			4.7			0.5	
Approach LOS		E			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		105.4		14.6		105.4		14.6				
Change Period (Y+Rc), s		6.3		* 5.9		6.3		* 5.9				
Max Green Setting (Gmax), s		88.7		* 19		88.7		* 19				
Max Q Clear Time (g_c+I1), s		20.9		8.4		21.0		2.3				
Green Ext Time (p_c), s		10.4		0.4		3.7		0.0				

Intersection Summary												
HCM 6th Ctrl Delay			8.3									
HCM 6th LOS			A									

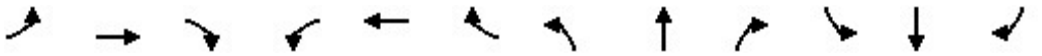
Notes

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



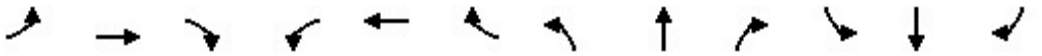
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1144	296	0	648	0	0	394	194
Future Volume (vph)	0	0	0	0	1144	296	0	648	0	0	394	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5			5.3			7.8	7.8
Lane Util. Factor					0.91			0.95			0.95	1.00
Frt					0.97			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					4977			3610			3574	1599
Flt Permitted					1.00			1.00			1.00	1.00
Satd. Flow (perm)					4977			3610			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	1271	329	0	745	0	0	458	226
RTOR Reduction (vph)	0	0	0	0	41	0	0	0	0	0	0	17
Lane Group Flow (vph)	0	0	0	0	1559	0	0	745	0	0	458	209
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type					NA			NA			NA	Perm
Protected Phases					4			2			6	
Permitted Phases												6
Actuated Green, G (s)					48.3			59.9			57.4	57.4
Effective Green, g (s)					48.3			59.9			57.4	57.4
Actuated g/C Ratio					0.40			0.50			0.48	0.48
Clearance Time (s)					6.5			5.3			7.8	7.8
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2003			1801			1709	764
v/s Ratio Prot					c0.31			c0.21			0.13	
v/s Ratio Perm												0.13
v/c Ratio					0.78			0.41			0.27	0.27
Uniform Delay, d1					31.2			19.0			18.7	18.8
Progression Factor					1.08			0.04			0.77	0.74
Incremental Delay, d2					2.0			0.7			0.4	0.9
Delay (s)					35.7			1.5			14.8	14.7
Level of Service					D			A			B	B
Approach Delay (s)		0.0			35.7			1.5			14.8	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1228	227	0	0	0	0	648	325	0	394	0
Future Volume (vph)	0	1228	227	0	0	0	0	648	325	0	394	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						7.8	7.8		5.3	
Lane Util. Factor		0.91						0.95	1.00		0.95	
Frt		0.98						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		5016						3574	1599		3574	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		5016						3574	1599		3574	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	1349	249	0	0	0	0	704	353	0	438	0
RTOR Reduction (vph)	0	24	0	0	0	0	0	0	17	0	0	0
Lane Group Flow (vph)	0	1574	0	0	0	0	0	704	336	0	438	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type		NA						NA	Perm		NA	
Protected Phases		8						6			2	
Permitted Phases									6			
Actuated Green, G (s)		48.3						57.4	57.4		59.9	
Effective Green, g (s)		48.3						57.4	57.4		59.9	
Actuated g/C Ratio		0.40						0.48	0.48		0.50	
Clearance Time (s)		6.5						7.8	7.8		5.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2018						1709	764		1784	
v/s Ratio Prot		c0.31						0.20			0.12	
v/s Ratio Perm									c0.21			
v/c Ratio		0.78						0.41	0.44		0.25	
Uniform Delay, d1		31.2						20.3	20.7		17.2	
Progression Factor		1.00						1.00	1.00		0.00	
Incremental Delay, d2		2.0						0.7	1.8		0.3	
Delay (s)		33.2						21.1	22.5		0.3	
Level of Service		C						C	C		A	
Approach Delay (s)		33.2			0.0			21.6			0.3	
Approach LOS		C			A			C			A	

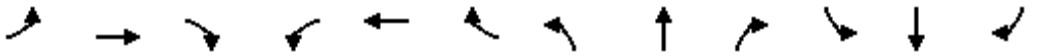
Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	1039	66	57	634	66	59	134	65	55	67	104
Future Volume (veh/h)	188	1039	66	57	634	66	59	134	65	55	67	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	198	1094	69	61	674	70	62	141	68	58	71	109
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	461	1222	1035	138	2106	218	300	431	366	253	425	360
Arrive On Green	0.65	0.65	0.65	0.65	0.65	0.65	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	722	1885	1598	483	3249	337	1223	1900	1610	1173	1870	1585
Grp Volume(v), veh/h	198	1094	69	61	368	376	62	141	68	58	71	109
Grp Sat Flow(s),veh/h/ln	722	1885	1598	483	1777	1810	1223	1900	1610	1173	1870	1585
Q Serve(g_s), s	20.1	58.4	1.9	14.6	11.0	11.1	5.1	7.4	4.1	5.2	3.7	6.8
Cycle Q Clear(g_c), s	31.2	58.4	1.9	72.9	11.0	11.1	8.8	7.4	4.1	12.7	3.7	6.8
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	461	1222	1035	138	1151	1173	300	431	366	253	425	360
V/C Ratio(X)	0.43	0.90	0.07	0.44	0.32	0.32	0.21	0.33	0.19	0.23	0.17	0.30
Avail Cap(c_a), veh/h	490	1296	1098	157	1222	1244	300	431	366	253	425	360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.3	17.7	7.8	48.3	9.4	9.4	40.8	38.7	37.4	44.0	37.3	38.5
Incr Delay (d2), s/veh	0.6	8.1	0.0	2.2	0.2	0.2	1.6	2.0	1.1	2.1	0.8	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	23.5	0.6	1.8	3.7	3.8	1.6	3.6	1.7	1.6	1.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	25.9	7.8	50.5	9.5	9.5	42.4	40.7	38.6	46.1	38.1	40.7
LnGrp LOS	B	C	A	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h		1361			805			271			238	
Approach Delay, s/veh		23.6			12.6			40.6			41.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		34.7		85.3		34.7		85.3				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		22.5		82.5		22.5		82.5				
Max Q Clear Time (g_c+I1), s		10.8		60.4		14.7		74.9				
Green Ext Time (p_c), s		0.8		10.7		0.5		2.9				

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	75	62	72	79	174	21	215	35	101	243	48
Future Volume (veh/h)	79	75	62	72	79	174	21	215	35	101	243	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1767	1767	1767	1841	1841	1841
Adj Flow Rate, veh/h	103	97	81	78	86	189	29	295	48	126	304	60
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.73	0.73	0.73	0.80	0.80	0.80
Percent Heavy Veh, %	4	4	4	4	4	4	9	9	9	4	4	4
Cap, veh/h	149	125	105	268	103	225	476	351	297	589	348	69
Arrive On Green	0.03	0.14	0.14	0.09	0.20	0.20	0.23	0.20	0.20	0.26	0.23	0.23
Sat Flow, veh/h	1753	927	774	1753	512	1126	1682	1767	1497	1753	1493	295
Grp Volume(v), veh/h	103	0	178	78	0	275	29	295	48	126	0	364
Grp Sat Flow(s),veh/h/ln	1753	0	1701	1753	0	1638	1682	1767	1497	1753	0	1788
Q Serve(g_s), s	0.5	0.0	8.1	0.0	0.0	12.9	0.0	12.9	2.1	0.0	0.0	15.7
Cycle Q Clear(g_c), s	0.5	0.0	8.1	0.0	0.0	12.9	0.0	12.9	2.1	0.0	0.0	15.7
Prop In Lane	1.00		0.46	1.00		0.69	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	149	0	230	268	0	328	476	351	297	589	0	417
V/C Ratio(X)	0.69	0.00	0.77	0.29	0.00	0.84	0.06	0.84	0.16	0.21	0.00	0.87
Avail Cap(c_a), veh/h	158	0	544	268	0	532	476	501	425	589	0	525
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	0.0	33.4	33.1	0.0	30.8	23.8	30.9	26.6	21.3	0.0	29.5
Incr Delay (d2), s/veh	11.3	0.0	5.5	0.6	0.0	6.4	0.1	21.1	1.2	0.2	0.0	21.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	3.5	1.4	0.0	5.3	0.4	7.1	0.8	1.6	0.0	8.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	0.0	38.9	33.7	0.0	37.1	23.9	51.9	27.7	21.5	0.0	51.1
LnGrp LOS	D	A	D	C	A	D	C	D	C	C	A	D
Approach Vol, veh/h		281			353			372			490	
Approach Delay, s/veh		42.5			36.3			46.6			43.5	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.4	22.3	13.2	17.1	24.6	25.1	9.0	21.3
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	3.8	22.7	3.5	* 26	3.0	23.5	3.1	26.0
Max Q Clear Time (g_c+I1), s	2.0	14.9	2.0	10.1	2.0	17.7	2.5	14.9
Green Ext Time (p_c), s	0.0	1.0	0.0	0.7	0.0	1.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	124	69	216	67	64	353
Future Volume (veh/h)	124	69	216	67	64	353
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	1767	1767	1856	1856
Adj Flow Rate, veh/h	157	87	273	85	84	464
Peak Hour Factor	0.79	0.79	0.79	0.79	0.76	0.76
Percent Heavy Veh, %	2	2	9	9	3	3
Cap, veh/h	208	185	310	97	885	1384
Arrive On Green	0.12	0.12	0.48	0.48	0.44	0.75
Sat Flow, veh/h	1781	1585	1292	402	1767	1856
Grp Volume(v), veh/h	157	87	0	358	84	464
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1694	1767	1856
Q Serve(g_s), s	6.8	4.1	0.0	15.2	0.0	6.8
Cycle Q Clear(g_c), s	6.8	4.1	0.0	15.2	0.0	6.8
Prop In Lane	1.00	1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	208	185	0	407	885	1384
V/C Ratio(X)	0.76	0.47	0.00	0.88	0.09	0.34
Avail Cap(c_a), veh/h	481	428	0	792	885	1384
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	33.0	0.0	19.8	12.4	3.4
Incr Delay (d2), s/veh	5.5	1.9	0.0	22.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	3.7	0.0	6.5	0.8	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.7	34.9	0.0	42.6	12.5	4.1
LnGrp LOS	D	C	A	D	B	A
Approach Vol, veh/h	244		358			548
Approach Delay, s/veh	38.0		42.6			5.4
Approach LOS	D		D			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.3		14.7	40.5	24.8
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 47		* 22	* 4.4	* 37
Max Q Clear Time (g_c+I1), s		8.8		8.8	2.0	17.2
Green Ext Time (p_c), s		3.0		0.5	0.0	2.0

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

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	0	104	0	0	0	54	272	0	0	454	30
Future Volume (veh/h)	41	0	104	0	0	0	54	272	0	0	454	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	0	1856	1856	1856
Adj Flow Rate, veh/h	61	0	155	0	0	0	82	412	0	0	554	37
Peak Hour Factor	0.67	0.67	0.67	0.92	0.92	0.92	0.66	0.66	0.66	0.82	0.82	0.82
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	0	3	3	3
Cap, veh/h	268	0	200	0	241	0	660	1291	0	90	1333	1130
Arrive On Green	0.13	0.00	0.13	0.00	0.00	0.00	0.72	0.72	0.00	0.00	1.00	1.00
Sat Flow, veh/h	1384	0	1547	0	1870	0	793	1796	0	966	1856	1572
Grp Volume(v), veh/h	61	0	155	0	0	0	82	412	0	0	554	37
Grp Sat Flow(s),veh/h/ln	1384	0	1547	0	1870	0	793	1796	0	966	1856	1572
Q Serve(g_s), s	3.2	0.0	7.8	0.0	0.0	0.0	2.6	6.7	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	7.8	0.0	0.0	0.0	2.6	6.7	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	268	0	200	0	241	0	660	1291	0	90	1333	1130
V/C Ratio(X)	0.23	0.00	0.78	0.00	0.00	0.00	0.12	0.32	0.00	0.00	0.42	0.03
Avail Cap(c_a), veh/h	490	0	447	0	540	0	660	1291	0	90	1333	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	33.7	0.0	0.0	0.0	3.5	4.1	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	6.4	0.0	0.0	0.0	0.4	0.7	0.0	0.0	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	3.2	0.0	0.0	0.0	0.4	1.9	0.0	0.0	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	0.0	40.1	0.0	0.0	0.0	3.9	4.8	0.0	0.0	1.0	0.1
LnGrp LOS	C	A	D	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		216			0			494			591	
Approach Delay, s/veh		37.9			0.0			4.6			0.9	
Approach LOS		D						A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	63.8	16.2	63.8	16.2
Change Period (Y+Rc), s	6.3	* 5.9	6.3	* 5.9
Max Green Setting (Gmax), s	44.7	* 23	44.7	* 23
Max Q Clear Time (g_c+I1), s	8.7	9.8	2.0	0.0
Green Ext Time (p_c), s	3.3	0.6	3.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	8.5
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	91	24	40	88	151	73	412	95	166	362	113
Future Volume (veh/h)	113	91	24	40	88	151	73	412	95	166	362	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	141	114	30	47	104	178	84	474	109	182	398	124
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.87	0.87	0.87	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	177	152	40	319	119	204	385	526	446	478	433	135
Arrive On Green	0.05	0.11	0.11	0.13	0.19	0.19	0.17	0.28	0.28	0.20	0.31	0.31
Sat Flow, veh/h	1795	1438	379	1795	624	1069	1795	1885	1598	1795	1378	429
Grp Volume(v), veh/h	141	0	144	47	0	282	84	474	109	182	0	522
Grp Sat Flow(s),veh/h/ln	1795	0	1817	1795	0	1693	1795	1885	1598	1795	0	1808
Q Serve(g_s), s	2.9	0.0	6.9	0.0	0.0	14.5	0.0	21.8	4.7	1.9	0.0	25.1
Cycle Q Clear(g_c), s	2.9	0.0	6.9	0.0	0.0	14.5	0.0	21.8	4.7	1.9	0.0	25.1
Prop In Lane	1.00		0.21	1.00		0.63	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	177	0	192	319	0	324	385	526	446	478	0	568
V/C Ratio(X)	0.80	0.00	0.75	0.15	0.00	0.87	0.22	0.90	0.24	0.38	0.00	0.92
Avail Cap(c_a), veh/h	248	0	545	319	0	408	385	599	508	478	0	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	39.1	34.1	0.0	35.3	31.0	31.2	25.1	28.4	0.0	29.8
Incr Delay (d2), s/veh	11.5	0.0	5.8	0.2	0.0	15.3	0.3	21.0	1.3	0.5	0.0	22.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	3.2	0.9	0.0	7.0	1.5	12.2	1.9	3.1	0.0	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	0.0	44.9	34.3	0.0	50.6	31.3	52.3	26.4	28.9	0.0	52.1
LnGrp LOS	D	A	D	C	A	D	C	D	C	C	A	D
Approach Vol, veh/h		285			329			667			704	
Approach Delay, s/veh		48.6			48.3			45.4			46.1	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.8	31.5	17.9	15.8	21.7	34.7	11.2	22.5
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	6.9	28.6	3.1	* 27	4.2	31.3	8.4	21.7
Max Q Clear Time (g_c+I1), s	3.9	23.8	2.0	8.9	2.0	27.1	4.9	16.5
Green Ext Time (p_c), s	0.1	1.3	0.0	0.6	0.0	1.2	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	46.6
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

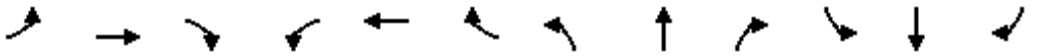
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	98	74	598	202	79	390
Future Volume (veh/h)	98	74	598	202	79	390
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	117	88	657	222	87	429
Peak Hour Factor	0.84	0.84	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	159	142	677	229	509	1488
Arrive On Green	0.09	0.09	1.00	1.00	0.22	0.79
Sat Flow, veh/h	1795	1598	1348	455	1795	1885
Grp Volume(v), veh/h	117	88	0	879	87	429
Grp Sat Flow(s),veh/h/ln	1795	1598	0	1803	1795	1885
Q Serve(g_s), s	5.7	4.8	0.0	0.0	0.0	5.6
Cycle Q Clear(g_c), s	5.7	4.8	0.0	0.0	0.0	5.6
Prop In Lane	1.00	1.00		0.25	1.00	
Lane Grp Cap(c), veh/h	159	142	0	905	509	1488
V/C Ratio(X)	0.74	0.62	0.00	0.97	0.17	0.29
Avail Cap(c_a), veh/h	291	259	0	1090	509	1488
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.0	39.6	0.0	0.0	26.5	2.6
Incr Delay (d2), s/veh	6.5	4.4	0.0	23.7	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.4	0.0	5.9	1.4	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.4	44.0	0.0	23.7	26.6	3.1
LnGrp LOS	D	D	A	C	C	A
Approach Vol, veh/h	205		879			516
Approach Delay, s/veh	45.4		23.7			7.0
Approach LOS	D		C			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		76.6		13.4	43.3	33.3
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 64		* 15	* 4.4	* 54
Max Q Clear Time (g_c+I1), s		7.6		7.7	2.0	2.0
Green Ext Time (p_c), s		2.7		0.3	0.0	8.2

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	0	76	0	1	2	137	786	2	1	489	59
Future Volume (veh/h)	61	0	76	0	1	2	137	786	2	1	489	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	69	0	86	0	2	3	156	893	2	1	515	62
Peak Hour Factor	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	1	1	1
Cap, veh/h	187	0	124	0	54	81	743	1478	3	451	1482	1256
Arrive On Green	0.08	0.00	0.08	0.00	0.08	0.08	0.79	0.79	0.79	1.00	1.00	1.00
Sat Flow, veh/h	1363	0	1585	0	686	1029	843	1880	4	627	1885	1598
Grp Volume(v), veh/h	69	0	86	0	0	5	156	0	895	1	515	62
Grp Sat Flow(s),veh/h/ln	1363	0	1585	0	0	1715	843	0	1884	627	1885	1598
Q Serve(g_s), s	4.3	0.0	4.8	0.0	0.0	0.2	4.4	0.0	17.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.5	0.0	4.8	0.0	0.0	0.2	4.4	0.0	17.4	17.5	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.60	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	0	124	0	0	135	743	0	1481	451	1482	1256
V/C Ratio(X)	0.37	0.00	0.69	0.00	0.00	0.04	0.21	0.00	0.60	0.00	0.35	0.05
Avail Cap(c_a), veh/h	376	0	336	0	0	364	743	0	1481	451	1482	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	40.4	0.0	0.0	38.3	2.5	0.0	3.9	2.2	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	6.7	0.0	0.0	0.1	0.6	0.0	1.8	0.0	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	2.1	0.0	0.0	0.1	0.6	0.0	4.6	0.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	47.1	0.0	0.0	38.4	3.2	0.0	5.8	2.2	0.6	0.1
LnGrp LOS	D	A	D	A	A	D	A	A	A	A	A	A
Approach Vol, veh/h		155			5			1051			578	
Approach Delay, s/veh		44.7			38.4			5.4			0.6	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		13.0		77.0		13.0				
Change Period (Y+Rc), s		6.3		* 5.9		6.3		* 5.9				
Max Green Setting (Gmax), s		58.7		* 19		58.7		* 19				
Max Q Clear Time (g_c+I1), s		19.4		6.8		19.5		2.2				
Green Ext Time (p_c), s		9.8		0.4		3.6		0.0				

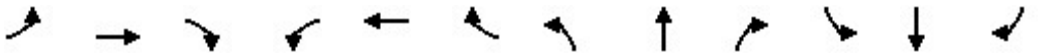
Intersection Summary		
HCM 6th Ctrl Delay		7.3
HCM 6th LOS		A

Notes

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

Appendix C

Near-Term Development Scenario Data



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	128	72	83	121	212	33	253	45	140	265	48
Future Volume (veh/h)	79	128	72	83	121	212	33	253	45	140	265	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1767	1767	1767	1841	1841	1841
Adj Flow Rate, veh/h	103	166	94	90	132	230	45	347	62	175	331	60
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.73	0.73	0.73	0.80	0.80	0.80
Percent Heavy Veh, %	4	4	4	4	4	4	9	9	9	4	4	4
Cap, veh/h	129	190	107	239	143	250	533	396	335	611	372	68
Arrive On Green	0.04	0.17	0.17	0.10	0.24	0.24	0.27	0.22	0.22	0.30	0.25	0.25
Sat Flow, veh/h	1753	1103	625	1753	602	1049	1682	1767	1497	1753	1516	275
Grp Volume(v), veh/h	103	0	260	90	0	362	45	347	62	175	0	391
Grp Sat Flow(s),veh/h/ln	1753	0	1728	1753	0	1652	1682	1767	1497	1753	0	1791
Q Serve(g_s), s	2.8	0.0	17.6	0.8	0.0	25.7	0.0	22.8	4.0	2.3	0.0	25.3
Cycle Q Clear(g_c), s	2.8	0.0	17.6	0.8	0.0	25.7	0.0	22.8	4.0	2.3	0.0	25.3
Prop In Lane	1.00		0.36	1.00		0.64	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	129	0	297	239	0	393	533	396	335	611	0	440
V/C Ratio(X)	0.80	0.00	0.87	0.38	0.00	0.92	0.08	0.88	0.18	0.29	0.00	0.89
Avail Cap(c_a), veh/h	143	0	457	239	0	450	533	760	644	611	0	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	48.4	48.9	0.0	44.6	31.4	45.0	37.7	29.6	0.0	43.7
Incr Delay (d2), s/veh	24.7	0.0	11.5	1.0	0.0	22.5	0.1	23.0	1.2	0.3	0.0	22.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	8.3	2.5	0.0	12.6	0.9	12.2	1.6	3.6	0.0	13.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	0.0	59.9	49.9	0.0	67.1	31.5	67.9	38.9	29.8	0.0	66.2
LnGrp LOS	F	A	E	D	A	E	C	E	D	C	A	E
Approach Vol, veh/h		363			452			454			566	
Approach Delay, s/veh		65.8			63.7			60.3			55.0	
Approach LOS		E			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.9	33.3	17.9	26.9	39.3	35.9	11.0	33.9
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.6	51.6	6.7	* 32	5.6	51.6	5.7	32.7
Max Q Clear Time (g_c+I1), s	4.3	24.8	2.8	19.6	2.0	27.3	4.8	27.7
Green Ext Time (p_c), s	0.1	2.1	0.1	1.0	0.0	2.2	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

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

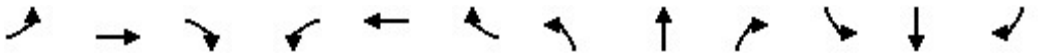
Intersection	
Int Delay, s/veh	8.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	227	83	236	163	55
Future Vol, veh/h	135	227	83	236	163	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	60	60
Heavy Vehicles, %	3	3	1	1	3	3
Mvmt Flow	167	280	97	274	272	92

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	447	0	635	167
Stage 1	-	-	-	-	167	-
Stage 2	-	-	-	-	468	-
Critical Hdwy	-	-	4.11	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1119	-	441	875
Stage 1	-	-	-	-	860	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1119	-	396	875
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	396	875	-	-	1119	-
HCM Lane V/C Ratio	0.686	0.105	-	-	0.086	-
HCM Control Delay (s)	31.7	9.6	-	-	8.5	0
HCM Lane LOS	D	A	-	-	A	A
HCM 95th %tile Q(veh)	5	0.4	-	-	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	127	367	72	66	20	81	259	83	18	365	26
Future Volume (veh/h)	46	127	367	72	66	20	81	259	83	18	365	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1781	1781	1781	1856	1856	1856
Adj Flow Rate, veh/h	50	138	399	81	74	22	89	285	91	19	388	28
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.91	0.91	0.91	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	8	8	8	3	3	3
Cap, veh/h	422	125	361	90	411	122	470	705	225	506	932	67
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1310	427	1235	882	1407	418	924	1294	413	999	1710	123
Grp Volume(v), veh/h	50	0	537	81	0	96	89	0	376	19	0	416
Grp Sat Flow(s),veh/h/ln	1310	0	1663	882	0	1825	924	0	1707	999	0	1833
Q Serve(g_s), s	2.4	0.0	23.4	0.0	0.0	3.1	5.0	0.0	10.3	0.9	0.0	10.7
Cycle Q Clear(g_c), s	5.5	0.0	23.4	23.4	0.0	3.1	15.7	0.0	10.3	11.2	0.0	10.7
Prop In Lane	1.00		0.74	1.00		0.23	1.00		0.24	1.00		0.07
Lane Grp Cap(c), veh/h	422	0	486	90	0	534	470	0	930	506	0	999
V/C Ratio(X)	0.12	0.00	1.10	0.90	0.00	0.18	0.19	0.00	0.40	0.04	0.00	0.42
Avail Cap(c_a), veh/h	422	0	486	90	0	534	470	0	930	506	0	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	28.3	40.0	0.0	21.1	15.3	0.0	10.6	13.9	0.0	10.7
Incr Delay (d2), s/veh	0.1	0.0	72.3	63.2	0.0	0.2	0.9	0.0	1.3	0.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	18.1	3.1	0.0	1.3	1.1	0.0	3.5	0.2	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	100.6	103.2	0.0	21.3	16.2	0.0	11.9	14.0	0.0	12.0
LnGrp LOS	C	A	F	F	A	C	B	A	B	B	A	B
Approach Vol, veh/h		587			177			465			435	
Approach Delay, s/veh		94.0			58.8			12.7			12.1	
Approach LOS		F			E			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0		30.0				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 44		* 23		* 44		* 23				
Max Q Clear Time (g_c+I1), s		17.7		25.4		13.2		25.4				
Green Ext Time (p_c), s		2.7		0.0		2.5		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		46.1
HCM 6th LOS		D

Notes

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

Intersection	
Intersection Delay, s/veh	96.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	149	8	83	11	28	18	41	448	1	6	302	110
Future Vol, veh/h	149	8	83	11	28	18	41	448	1	6	302	110
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.72	0.72	0.72	0.60	0.60	0.60
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	3	3	3
Mvmt Flow	177	10	99	14	36	23	57	622	1	10	503	183
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	16.6	13.2	188.2	48.6
HCM LOS	C	B	F	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	8%	0%	95%	0%	28%	0%	2%	0%
Vol Thru, %	92%	0%	5%	0%	72%	0%	98%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	489	1	157	83	39	18	308	110
LT Vol	41	0	149	0	11	0	6	0
Through Vol	448	0	8	0	28	0	302	0
RT Vol	0	1	0	83	0	18	0	110
Lane Flow Rate	679	1	187	99	50	23	513	183
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.343	0.002	0.437	0.199	0.123	0.052	0.975	0.312
Departure Headway (Hd)	7.121	6.361	9.099	7.875	9.736	8.851	7.352	6.622
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	559	398	458	371	407	498	546
Service Time	4.902	4.143	6.799	5.575	7.436	6.551	5.052	4.322
HCM Lane V/C Ratio	1.334	0.002	0.47	0.216	0.135	0.057	1.03	0.335
HCM Control Delay	188.6	9.2	18.7	12.5	13.8	12	61.5	12.3
HCM Lane LOS	F	A	C	B	B	B	F	B
HCM 95th-tile Q	29.9	0	2.2	0.7	0.4	0.2	12.6	1.3

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	30	246	133	225	254	13
Future Vol, veh/h	30	246	133	225	254	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	78	78	82	82
Heavy Vehicles, %	2	2	10	10	6	6
Mvmt Flow	34	283	171	288	310	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	948	318	326	0	-	0
Stage 1	318	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	289	723	1190	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	247	723	1190	-	-	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	531	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1190	-	629	-	-
HCM Lane V/C Ratio	0.143	-	0.504	-	-
HCM Control Delay (s)	8.5	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	2.8	-	-

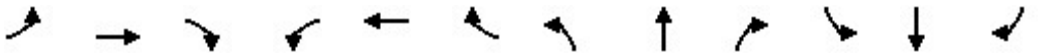
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	182	95	300	127	88	545
Future Volume (veh/h)	182	95	300	127	88	545
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1767	1767	1856	1856
Adj Flow Rate, veh/h	230	120	380	161	116	717
Peak Hour Factor	0.79	0.79	0.79	0.79	0.76	0.76
Percent Heavy Veh, %	2	2	9	9	3	3
Cap, veh/h	261	232	400	170	751	1414
Arrive On Green	0.15	0.15	0.68	0.68	0.38	0.76
Sat Flow, veh/h	1781	1585	1178	499	1767	1856
Grp Volume(v), veh/h	230	120	0	541	116	717
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1677	1767	1856
Q Serve(g_s), s	15.2	8.4	0.0	35.0	0.0	18.0
Cycle Q Clear(g_c), s	15.2	8.4	0.0	35.0	0.0	18.0
Prop In Lane	1.00	1.00		0.30	1.00	
Lane Grp Cap(c), veh/h	261	232	0	570	751	1414
V/C Ratio(X)	0.88	0.52	0.00	0.95	0.15	0.51
Avail Cap(c_a), veh/h	306	272	0	1040	751	1414
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	47.3	0.0	18.3	22.9	5.5
Incr Delay (d2), s/veh	22.3	1.8	0.0	27.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	7.5	0.0	10.4	2.0	5.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	72.5	49.1	0.0	45.4	23.0	6.8
LnGrp LOS	E	D	A	D	C	A
Approach Vol, veh/h	350		541			833
Approach Delay, s/veh	64.5		45.4			9.1
Approach LOS	E		D			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		97.0		23.0	50.7	46.4
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 88		* 21	* 8.4	* 74
Max Q Clear Time (g_c+I1), s		20.0		17.2	2.0	37.0
Green Ext Time (p_c), s		5.6		0.4	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	31.7
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	51	91	85	74	38	53	372	19	49	429	56
Future Volume (veh/h)	79	51	91	85	74	38	53	372	19	49	429	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	96	62	111	108	94	48	79	555	28	67	588	77
Peak Hour Factor	0.82	0.82	0.82	0.79	0.79	0.79	0.67	0.67	0.67	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	229	110	153	261	164	70	163	736	35	145	718	90
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	485	499	691	595	743	318	126	1506	72	96	1470	184
Grp Volume(v), veh/h	269	0	0	250	0	0	662	0	0	732	0	0
Grp Sat Flow(s),veh/h/ln	1675	0	0	1656	0	0	1705	0	0	1750	0	0
Q Serve(g_s), s	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0	5.1	0.0	0.0	12.2	0.0	0.0	14.1	0.0	0.0
Prop In Lane	0.36		0.41	0.43		0.19	0.12		0.04	0.09		0.11
Lane Grp Cap(c), veh/h	492	0	0	495	0	0	934	0	0	953	0	0
V/C Ratio(X)	0.55	0.00	0.00	0.51	0.00	0.00	0.71	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	1060	0	0	1051	0	0	1135	0	0	1154	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	14.1	0.0	0.0	8.2	0.0	0.0	8.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.8	0.0	0.0	1.6	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	1.6	0.0	0.0	2.6	0.0	0.0	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.2	0.0	0.0	14.9	0.0	0.0	9.8	0.0	0.0	11.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	A	A	A	B	A	A
Approach Vol, veh/h		269			250			662			732	
Approach Delay, s/veh		15.2			14.9			9.8			11.3	
Approach LOS		B			B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.1		14.8		25.1		14.8				
Change Period (Y+Rc), s		* 5.6		* 6		* 5.6		* 6				
Max Green Setting (Gmax), s		* 24		* 24		* 25		* 24				
Max Q Clear Time (g_c+I1), s		16.1		7.1		14.2		7.5				
Green Ext Time (p_c), s		3.4		1.2		3.2		1.3				

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

Notes

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

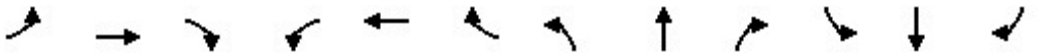
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	143	0	0	0	67	397	0	0	687	47
Future Volume (veh/h)	60	0	143	0	0	0	67	397	0	0	687	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	0	1856	1856	1856
Adj Flow Rate, veh/h	90	0	213	0	0	0	102	602	0	0	838	57
Peak Hour Factor	0.67	0.67	0.67	0.92	0.92	0.92	0.66	0.66	0.66	0.82	0.82	0.82
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	0	3	3	3
Cap, veh/h	276	0	242	0	293	0	503	1333	0	60	1377	1167
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.00	0.74	0.74	0.00	0.00	1.00	1.00
Sat Flow, veh/h	1384	0	1547	0	1870	0	597	1796	0	811	1856	1572
Grp Volume(v), veh/h	90	0	213	0	0	0	102	602	0	0	838	57
Grp Sat Flow(s),veh/h/ln	1384	0	1547	0	1870	0	597	1796	0	811	1856	1572
Q Serve(g_s), s	7.0	0.0	16.2	0.0	0.0	0.0	6.4	15.6	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	16.2	0.0	0.0	0.0	6.4	15.6	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	242	0	293	0	503	1333	0	60	1377	1167
V/C Ratio(X)	0.33	0.00	0.88	0.00	0.00	0.00	0.20	0.45	0.00	0.00	0.61	0.05
Avail Cap(c_a), veh/h	338	0	311	0	376	0	503	1333	0	60	1377	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	0.0	49.5	0.0	0.0	0.0	4.8	6.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.7	0.0	20.1	0.0	0.0	0.0	0.9	1.1	0.0	0.0	2.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	7.6	0.0	0.0	0.0	0.8	5.4	0.0	0.0	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	69.7	0.0	0.0	0.0	5.7	7.1	0.0	0.0	2.0	0.1
LnGrp LOS	D	A	E	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		303			0			704			895	
Approach Delay, s/veh		62.7			0.0			6.9			1.9	
Approach LOS		E						A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	95.3	24.7	95.3	24.7
Change Period (Y+Rc), s	6.3	* 5.9	6.3	* 5.9
Max Green Setting (Gmax), s	83.7	* 24	83.7	* 24
Max Q Clear Time (g_c+I1), s	17.6	18.2	2.0	0.0
Green Ext Time (p_c), s	6.0	0.6	7.5	0.0

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

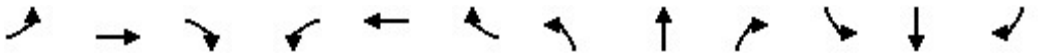
Notes

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



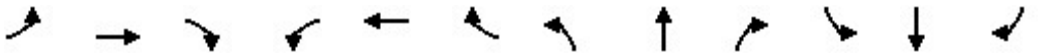
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1177	260	0	291	0	0	447	416
Future Volume (vph)	0	0	0	0	1177	260	0	291	0	0	447	416
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5			5.3			7.8	7.8
Lane Util. Factor					0.91			0.95			0.95	1.00
Frt					0.97			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					4899			3505			3539	1583
Flt Permitted					1.00			1.00			1.00	1.00
Satd. Flow (perm)					4899			3505			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	1239	274	0	342	0	0	497	462
RTOR Reduction (vph)	0	0	0	0	37	0	0	0	0	0	0	25
Lane Group Flow (vph)	0	0	0	0	1476	0	0	342	0	0	497	437
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Turn Type					NA			NA			NA	Perm
Protected Phases					4			2			6	
Permitted Phases												6
Actuated Green, G (s)					48.8			59.4			56.9	56.9
Effective Green, g (s)					48.8			59.4			56.9	56.9
Actuated g/C Ratio					0.41			0.49			0.47	0.47
Clearance Time (s)					6.5			5.3			7.8	7.8
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					1992			1734			1678	750
v/s Ratio Prot					c0.30			0.10			0.14	
v/s Ratio Perm												c0.28
v/c Ratio					0.74			0.20			0.30	0.58
Uniform Delay, d1					30.2			17.0			19.3	22.9
Progression Factor					1.00			0.00			0.86	0.90
Incremental Delay, d2					1.5			0.3			0.4	2.9
Delay (s)					31.8			0.3			16.9	23.5
Level of Service					C			A			B	C
Approach Delay (s)		0.0			31.8			0.3			20.1	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1043	166	0	0	0	0	291	167	0	447	0
Future Volume (vph)	0	1043	166	0	0	0	0	291	167	0	447	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						7.8	7.8		5.3	
Lane Util. Factor		0.91						0.95	1.00		0.95	
Frt		0.98						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		4980						3471	1553		3539	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		4980						3471	1553		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	0	1098	175	0	0	0	0	383	220	0	639	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	0	1250	0	0	0	0	0	383	184	0	639	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type		NA						NA	Perm		NA	
Protected Phases		8						6			2	
Permitted Phases									6			
Actuated Green, G (s)		48.8						56.9	56.9		59.4	
Effective Green, g (s)		48.8						56.9	56.9		59.4	
Actuated g/C Ratio		0.41						0.47	0.47		0.49	
Clearance Time (s)		6.5						7.8	7.8		5.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2025						1645	736		1751	
v/s Ratio Prot		c0.25						0.11			c0.18	
v/s Ratio Perm									0.12			
v/c Ratio		0.62						0.23	0.25		0.36	
Uniform Delay, d1		28.2						18.6	18.8		18.7	
Progression Factor		1.00						1.00	1.00		0.24	
Incremental Delay, d2		0.6						0.3	0.8		0.6	
Delay (s)		28.8						19.0	19.6		5.1	
Level of Service		C						B	B		A	
Approach Delay (s)		28.8			0.0			19.2			5.1	
Approach LOS		C			A			B			A	

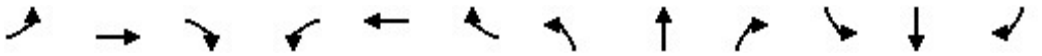
Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	526	81	116	1079	147	79	58	26	161	168	417
Future Volume (veh/h)	229	526	81	116	1079	147	79	58	26	161	168	417
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	257	591	91	122	1136	155	85	62	28	185	193	479
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	3	3	3	1	1	1	1	1	1
Cap, veh/h	217	1103	935	372	1884	256	205	511	433	384	511	433
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	417	1826	1547	753	3118	424	772	1885	1598	1317	1885	1598
Grp Volume(v), veh/h	257	591	91	122	641	650	85	62	28	185	193	479
Grp Sat Flow(s),veh/h/ln	417	1826	1547	753	1763	1779	772	1885	1598	1317	1885	1598
Q Serve(g_s), s	45.2	22.7	3.0	13.6	27.1	27.3	12.1	3.0	1.6	14.8	10.0	32.5
Cycle Q Clear(g_c), s	72.5	22.7	3.0	36.3	27.1	27.3	22.0	3.0	1.6	17.8	10.0	32.5
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	1103	935	372	1065	1075	205	511	433	384	511	433
V/C Ratio(X)	1.18	0.54	0.10	0.33	0.60	0.60	0.41	0.12	0.06	0.48	0.38	1.11
Avail Cap(c_a), veh/h	217	1103	935	372	1065	1075	205	511	433	384	511	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	13.9	10.0	24.5	14.8	14.8	44.5	33.0	32.5	39.7	35.5	43.8
Incr Delay (d2), s/veh	119.7	0.5	0.0	0.5	1.0	1.0	6.1	0.5	0.3	4.3	2.1	75.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.6	8.4	0.9	2.3	9.8	9.9	2.6	1.4	0.6	5.1	4.8	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	163.4	14.4	10.0	25.0	15.7	15.8	50.6	33.5	32.8	44.0	37.7	119.3
LnGrp LOS	F	B	B	C	B	B	D	C	C	D	D	F
Approach Vol, veh/h		939			1413			175			857	
Approach Delay, s/veh		54.8			16.6			41.7			84.7	
Approach LOS		D			B			D			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		80.0		40.0		80.0				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		32.5		72.5		32.5		72.5				
Max Q Clear Time (g_c+I1), s		24.0		74.5		34.5		38.3				
Green Ext Time (p_c), s		0.5		0.0		0.0		11.0				

Intersection Summary												
HCM 6th Ctrl Delay			45.7									
HCM 6th LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	126	41	55	119	172	85	444	107	196	409	113
Future Volume (veh/h)	113	126	41	55	119	172	85	444	107	196	409	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	141	158	51	65	140	202	98	510	123	215	449	124
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.87	0.87	0.87	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	145	187	60	288	153	221	392	570	483	498	490	135
Arrive On Green	0.05	0.14	0.14	0.12	0.22	0.22	0.18	0.30	0.30	0.23	0.34	0.34
Sat Flow, veh/h	1795	1365	441	1795	698	1006	1795	1885	1598	1795	1422	393
Grp Volume(v), veh/h	141	0	209	65	0	342	98	510	123	215	0	573
Grp Sat Flow(s),veh/h/ln	1795	0	1806	1795	0	1704	1795	1885	1598	1795	0	1815
Q Serve(g_s), s	5.4	0.0	13.6	0.0	0.0	23.5	1.4	31.0	7.0	5.7	0.0	36.3
Cycle Q Clear(g_c), s	5.4	0.0	13.6	0.0	0.0	23.5	1.4	31.0	7.0	5.7	0.0	36.3
Prop In Lane	1.00		0.24	1.00		0.59	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	145	0	247	288	0	374	392	570	483	498	0	625
V/C Ratio(X)	0.97	0.00	0.85	0.23	0.00	0.91	0.25	0.89	0.25	0.43	0.00	0.92
Avail Cap(c_a), veh/h	145	0	447	288	0	436	392	842	714	498	0	810
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	50.6	46.2	0.0	45.7	40.0	40.0	31.6	36.5	0.0	37.7
Incr Delay (d2), s/veh	65.5	0.0	7.8	0.4	0.0	21.6	0.3	19.1	1.3	0.6	0.0	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	6.5	1.7	0.0	11.9	2.4	16.8	2.8	5.1	0.0	18.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	121.4	0.0	58.4	46.6	0.0	67.3	40.4	59.1	32.9	37.1	0.0	58.1
LnGrp LOS	F	A	E	D	A	E	D	E	C	D	A	E
Approach Vol, veh/h		350			407			731			788	
Approach Delay, s/veh		83.8			64.0			52.2			52.4	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.6	42.7	21.0	22.7	28.6	47.8	12.0	31.7
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.6	53.6	6.7	* 30	5.6	53.6	5.7	30.7
Max Q Clear Time (g_c+I1), s	7.7	33.0	2.0	15.6	3.4	38.3	7.4	25.5
Green Ext Time (p_c), s	0.0	3.3	0.0	0.8	0.0	3.1	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	59.2
HCM 6th LOS	E

Notes

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

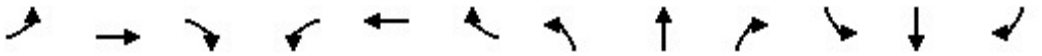
Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	300	128	44	214	126	92
Future Vol, veh/h	300	128	44	214	126	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	83	83	76	76
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	341	145	53	258	166	121

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	486	0	705	341
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1082	-	406	706
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1082	-	383	706
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	707	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	383	706	-	-	1082	-
HCM Lane V/C Ratio	0.433	0.171	-	-	0.049	-
HCM Control Delay (s)	21.4	11.2	-	-	8.5	0
HCM Lane LOS	C	B	-	-	A	A
HCM 95th %tile Q(veh)	2.1	0.6	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	76	159	32	73	22	313	520	57	37	405	65
Future Volume (veh/h)	70	76	159	32	73	22	313	520	57	37	405	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	84	92	192	36	82	25	329	547	60	42	460	74
Peak Hour Factor	0.83	0.83	0.83	0.89	0.89	0.89	0.95	0.95	0.95	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	310	119	248	156	305	93	494	1031	113	443	978	157
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1287	540	1127	1104	1386	423	877	1669	183	820	1584	255
Grp Volume(v), veh/h	84	0	284	36	0	107	329	0	607	42	0	534
Grp Sat Flow(s),veh/h/ln	1287	0	1667	1104	0	1809	877	0	1852	820	0	1839
Q Serve(g_s), s	4.6	0.0	12.8	2.5	0.0	3.9	25.9	0.0	14.9	2.5	0.0	12.5
Cycle Q Clear(g_c), s	8.6	0.0	12.8	15.3	0.0	3.9	38.4	0.0	14.9	17.4	0.0	12.5
Prop In Lane	1.00		0.68	1.00		0.23	1.00		0.10	1.00		0.14
Lane Grp Cap(c), veh/h	310	0	367	156	0	398	494	0	1144	443	0	1136
V/C Ratio(X)	0.27	0.00	0.77	0.23	0.00	0.27	0.67	0.00	0.53	0.09	0.00	0.47
Avail Cap(c_a), veh/h	403	0	488	236	0	529	494	0	1144	443	0	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	29.3	36.5	0.0	25.9	18.6	0.0	8.7	13.7	0.0	8.2
Incr Delay (d2), s/veh	0.5	0.0	5.5	0.7	0.0	0.4	6.9	0.0	1.8	0.4	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	5.3	0.7	0.0	1.6	5.4	0.0	5.0	0.5	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	0.0	34.8	37.3	0.0	26.2	25.5	0.0	10.5	14.1	0.0	9.6
LnGrp LOS	C	A	C	D	A	C	C	A	B	B	A	A
Approach Vol, veh/h		368			143			936			576	
Approach Delay, s/veh		33.7			29.0			15.8			10.0	
Approach LOS		C			C			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2		55.8		24.2				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 44		* 23		* 44		* 23				
Max Q Clear Time (g_c+I1), s		40.4		14.8		19.4		17.3				
Green Ext Time (p_c), s		1.7		1.2		3.5		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Notes

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

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	29	91	8	26	6	68	259	25	8	210	33
Future Vol, veh/h	46	29	91	8	26	6	68	259	25	8	210	33
Peak Hour Factor	0.87	0.87	0.87	0.77	0.77	0.77	0.80	0.80	0.80	0.77	0.77	0.77
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	53	33	105	10	34	8	85	324	31	10	273	43
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	10.4	10.3	18.2	12.8
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	21%	0%	61%	0%	24%	0%	4%	0%
Vol Thru, %	79%	0%	39%	0%	76%	0%	96%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	327	25	75	91	34	6	218	33
LT Vol	68	0	46	0	8	0	8	0
Through Vol	259	0	29	0	26	0	210	0
RT Vol	0	25	0	91	0	6	0	33
Lane Flow Rate	409	31	86	105	44	8	283	43
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.658	0.043	0.167	0.173	0.087	0.014	0.46	0.061
Departure Headway (Hd)	5.794	4.982	6.968	5.944	7.1	6.264	5.853	5.126
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	625	718	514	602	503	569	614	698
Service Time	3.531	2.719	4.721	3.696	4.863	4.027	3.594	2.866
HCM Lane V/C Ratio	0.654	0.043	0.167	0.174	0.087	0.014	0.461	0.062
HCM Control Delay	19	7.9	11.1	9.9	10.5	9.1	13.5	8.2
HCM Lane LOS	C	A	B	A	B	A	B	A
HCM 95th-tile Q	4.9	0.1	0.6	0.6	0.3	0	2.4	0.2

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	208	362	374	347	32
Future Vol, veh/h	14	208	362	374	347	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	87	87	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	16	231	416	430	365	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1644	382	399	0	-	0
Stage 1	382	-	-	-	-	-
Stage 2	1262	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	110	665	1165	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	266	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	71	665	1165	-	-	-
Mov Cap-2 Maneuver	~ -430	-	-	-	-	-
Stage 1	444	-	-	-	-	-
Stage 2	266	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	4.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1165	-	792	-	-
HCM Lane V/C Ratio	0.357	-	0.311	-	-
HCM Control Delay (s)	9.8	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	1.6	-	1.3	-	-

Notes

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

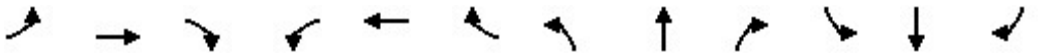
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	136	105	798	250	112	538
Future Volume (veh/h)	136	105	798	250	112	538
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	162	125	877	275	123	591
Peak Hour Factor	0.84	0.84	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	196	174	848	266	309	1507
Arrive On Green	0.11	0.11	1.00	1.00	0.14	0.80
Sat Flow, veh/h	1795	1598	1376	431	1795	1885
Grp Volume(v), veh/h	162	125	0	1152	123	591
Grp Sat Flow(s),veh/h/ln	1795	1598	0	1808	1795	1885
Q Serve(g_s), s	10.6	9.1	0.0	74.0	3.0	11.0
Cycle Q Clear(g_c), s	10.6	9.1	0.0	74.0	3.0	11.0
Prop In Lane	1.00	1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	196	174	0	1114	309	1507
V/C Ratio(X)	0.83	0.72	0.00	1.03	0.40	0.39
Avail Cap(c_a), veh/h	293	261	0	1121	309	1507
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.4	51.7	0.0	0.0	45.2	3.5
Incr Delay (d2), s/veh	11.5	5.4	0.0	36.1	0.3	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	8.1	0.0	11.2	3.2	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	63.8	57.1	0.0	36.1	45.6	4.3
LnGrp LOS	E	E	A	F	D	A
Approach Vol, veh/h	287		1152			714
Approach Delay, s/veh	60.9		36.1			11.4
Approach LOS	E		D			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		101.5		18.5	21.7	79.8
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 89		* 20	* 9.4	* 74
Max Q Clear Time (g_c+I1), s		13.0		12.6	5.0	76.0
Green Ext Time (p_c), s		4.2		0.5	0.0	0.0

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

Notes

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



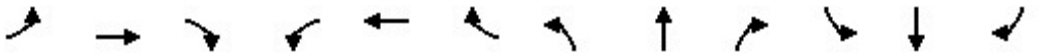
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	100	122	56	65	31	128	383	88	41	277	37
Future Volume (veh/h)	76	100	122	56	65	31	128	383	88	41	277	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	90	119	145	62	72	34	141	421	97	59	396	53
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.91	0.91	0.91	0.70	0.70	0.70
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	0	0	0
Cap, veh/h	190	184	187	233	247	93	225	515	110	146	668	84
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	311	660	674	432	888	335	273	1128	242	119	1464	184
Grp Volume(v), veh/h	354	0	0	168	0	0	659	0	0	508	0	0
Grp Sat Flow(s),veh/h/ln	1646	0	0	1654	0	0	1643	0	0	1767	0	0
Q Serve(g_s), s	5.3	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.5	0.0	0.0	3.2	0.0	0.0	15.3	0.0	0.0	9.0	0.0	0.0
Prop In Lane	0.25		0.41	0.37		0.20	0.21		0.15	0.12		0.10
Lane Grp Cap(c), veh/h	561	0	0	573	0	0	850	0	0	898	0	0
V/C Ratio(X)	0.63	0.00	0.00	0.29	0.00	0.00	0.78	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	995	0	0	974	0	0	1013	0	0	1068	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.4	0.0	0.0	12.5	0.0	0.0	10.3	0.0	0.0	8.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.3	0.0	0.0	3.2	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	1.0	0.0	0.0	3.9	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	0.0	0.0	12.8	0.0	0.0	13.5	0.0	0.0	9.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	A	A	A
Approach Vol, veh/h		354			168			659			508	
Approach Delay, s/veh		15.5			12.8			13.5			9.4	
Approach LOS		B			B			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		25.5		18.1		25.5		18.1				
Change Period (Y+Rc), s		* 5.6		* 6		* 5.6		* 6				
Max Green Setting (Gmax), s		* 24		* 24		* 25		* 24				
Max Q Clear Time (g_c+I1), s		11.0		5.2		17.3		10.5				
Green Ext Time (p_c), s		2.9		0.8		2.6		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	12.7	
HCM 6th LOS	B	

Notes

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



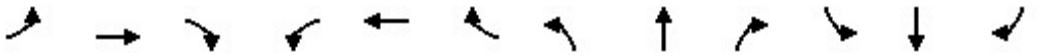
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	0	102	0	1	2	176	1020	2	1	662	70
Future Volume (veh/h)	76	0	102	0	1	2	176	1020	2	1	662	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	86	0	116	0	2	3	200	1159	2	1	697	74
Peak Hour Factor	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	1	1	1
Cap, veh/h	186	0	146	0	63	95	627	1516	3	301	1520	1288
Arrive On Green	0.09	0.00	0.09	0.00	0.09	0.09	0.81	0.81	0.81	1.00	1.00	1.00
Sat Flow, veh/h	1371	0	1585	0	686	1029	704	1881	3	488	1885	1598
Grp Volume(v), veh/h	86	0	116	0	0	5	200	0	1161	1	697	74
Grp Sat Flow(s),veh/h/ln	1371	0	1585	0	0	1715	704	0	1885	488	1885	1598
Q Serve(g_s), s	7.1	0.0	8.6	0.0	0.0	0.3	9.2	0.0	37.3	0.1	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	8.6	0.0	0.0	0.3	9.2	0.0	37.3	37.4	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.60	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	186	0	146	0	0	158	627	0	1519	301	1520	1288
V/C Ratio(X)	0.46	0.00	0.79	0.00	0.00	0.03	0.32	0.00	0.76	0.00	0.46	0.06
Avail Cap(c_a), veh/h	281	0	252	0	0	273	627	0	1519	301	1520	1288
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	0.0	53.3	0.0	0.0	49.6	3.2	0.0	5.9	7.2	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	9.3	0.0	0.0	0.1	1.3	0.0	3.7	0.0	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	3.8	0.0	0.0	0.1	1.2	0.0	11.7	0.0	0.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.7	0.0	62.6	0.0	0.0	49.7	4.5	0.0	9.6	7.2	1.0	0.1
LnGrp LOS	D	A	E	A	A	D	A	A	A	A	A	A
Approach Vol, veh/h		202			5			1361			772	
Approach Delay, s/veh		59.2			49.7			8.8			0.9	
Approach LOS		E			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		103.0		17.0		103.0		17.0				
Change Period (Y+Rc), s		6.3		* 5.9		6.3		* 5.9				
Max Green Setting (Gmax), s		88.7		* 19		88.7		* 19				
Max Q Clear Time (g_c+I1), s		39.3		10.6		39.4		2.3				
Green Ext Time (p_c), s		18.4		0.5		5.6		0.0				

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

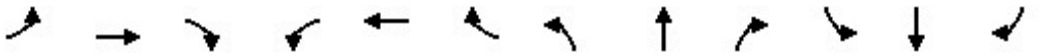
Notes

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



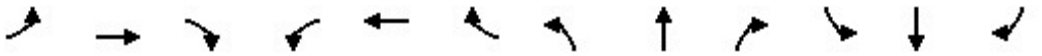
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1272	556	0	720	0	0	443	380
Future Volume (vph)	0	0	0	0	1272	556	0	720	0	0	443	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5			5.3			7.8	7.8
Lane Util. Factor					0.91			0.95			0.95	1.00
Frt					0.95			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					4901			3610			3574	1599
Flt Permitted					1.00			1.00			1.00	1.00
Satd. Flow (perm)					4901			3610			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	1413	618	0	828	0	0	515	442
RTOR Reduction (vph)	0	0	0	0	54	0	0	0	0	0	0	18
Lane Group Flow (vph)	0	0	0	0	1977	0	0	828	0	0	515	424
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type					NA			NA			NA	Perm
Protected Phases					4			2			6	
Permitted Phases												6
Actuated Green, G (s)					53.9			54.3			51.8	51.8
Effective Green, g (s)					53.9			54.3			51.8	51.8
Actuated g/C Ratio					0.45			0.45			0.43	0.43
Clearance Time (s)					6.5			5.3			7.8	7.8
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2201			1633			1542	690
v/s Ratio Prot					c0.40			0.23			0.14	
v/s Ratio Perm												c0.27
v/c Ratio					0.90			0.51			0.33	0.61
Uniform Delay, d1					30.5			23.3			22.6	26.4
Progression Factor					1.00			0.04			0.87	0.83
Incremental Delay, d2					5.3			1.0			0.6	3.9
Delay (s)					35.8			2.0			20.2	25.8
Level of Service					D			A			C	C
Approach Delay (s)		0.0			35.8			2.0			22.8	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1571	246	0	0	0	0	720	357	0	443	0
Future Volume (vph)	0	1571	246	0	0	0	0	720	357	0	443	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						7.8	7.8		5.3	
Lane Util. Factor		0.91						0.95	1.00		0.95	
Frt		0.98						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		5031						3574	1599		3574	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		5031						3574	1599		3574	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	1726	270	0	0	0	0	783	388	0	492	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	18	0	0	0
Lane Group Flow (vph)	0	1978	0	0	0	0	0	783	370	0	492	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type		NA						NA	Perm		NA	
Protected Phases		8						6			2	
Permitted Phases									6			
Actuated Green, G (s)		53.9						51.8	51.8		54.3	
Effective Green, g (s)		53.9						51.8	51.8		54.3	
Actuated g/C Ratio		0.45						0.43	0.43		0.45	
Clearance Time (s)		6.5						7.8	7.8		5.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2259						1542	690		1617	
v/s Ratio Prot		c0.39						0.22			0.14	
v/s Ratio Perm									c0.23			
v/c Ratio		0.88						0.51	0.54		0.30	
Uniform Delay, d1		30.0						24.8	25.2		20.9	
Progression Factor		1.00						1.00	1.00		0.00	
Incremental Delay, d2		4.1						1.2	3.0		0.5	
Delay (s)		34.2						26.0	28.2		0.5	
Level of Service		C						C	C		A	
Approach Delay (s)		34.2			0.0			26.7			0.5	
Approach LOS		C			A			C			A	

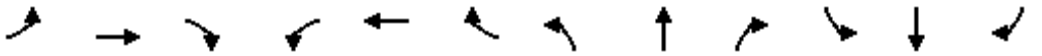
Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	1351	113	64	841	148	105	183	78	134	100	239
Future Volume (veh/h)	396	1351	113	64	841	148	105	183	78	134	100	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	417	1422	119	68	895	157	111	193	82	141	105	252
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	361	1296	1098	60	2078	364	205	356	302	166	351	297
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	541	1885	1598	336	3022	530	1041	1900	1610	1104	1870	1585
Grp Volume(v), veh/h	417	1422	119	68	526	526	111	193	82	141	105	252
Grp Sat Flow(s),veh/h/ln	541	1885	1598	336	1777	1775	1041	1900	1610	1104	1870	1585
Q Serve(g_s), s	66.7	82.5	3.0	0.0	15.8	15.8	12.3	11.0	5.2	11.5	5.8	18.4
Cycle Q Clear(g_c), s	82.5	82.5	3.0	82.5	15.8	15.8	18.1	11.0	5.2	22.5	5.8	18.4
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	361	1296	1098	60	1222	1220	205	356	302	166	351	297
V/C Ratio(X)	1.16	1.10	0.11	1.13	0.43	0.43	0.54	0.54	0.27	0.85	0.30	0.85
Avail Cap(c_a), veh/h	361	1296	1098	60	1222	1220	205	356	302	166	351	297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.2	18.8	6.3	60.0	8.3	8.3	49.8	44.1	41.7	55.7	42.0	47.1
Incr Delay (d2), s/veh	97.2	56.0	0.0	157.3	0.2	0.2	9.9	5.8	2.2	39.2	2.2	24.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	47.7	0.9	4.4	5.0	5.0	3.7	5.6	2.2	6.0	2.8	9.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	129.4	74.7	6.4	217.3	8.6	8.6	59.7	49.9	43.9	95.0	44.1	71.9
LnGrp LOS	F	F	A	F	A	A	E	D	D	F	D	E
Approach Vol, veh/h		1958			1120			386			498	
Approach Delay, s/veh		82.2			21.2			51.4			72.6	
Approach LOS		F			C			D			E	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.0	90.0	30.0	90.0
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5
Max Green Setting (Gmax), s	22.5	82.5	22.5	82.5
Max Q Clear Time (g_c+I1), s	20.1	84.5	24.5	84.5
Green Ext Time (p_c), s	0.4	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	60.8
HCM 6th LOS	E



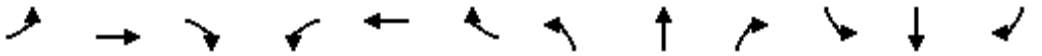
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	128	72	83	121	212	33	253	45	140	265	48
Future Volume (veh/h)	79	128	72	83	121	212	33	253	45	140	265	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1767	1767	1767	1841	1841	1841
Adj Flow Rate, veh/h	103	166	94	90	132	230	45	347	62	175	331	60
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.73	0.73	0.73	0.80	0.80	0.80
Percent Heavy Veh, %	4	4	4	4	4	4	9	9	9	4	4	4
Cap, veh/h	292	327	185	397	193	337	208	460	390	274	432	78
Arrive On Green	0.06	0.30	0.30	0.07	0.32	0.32	0.04	0.26	0.26	0.06	0.29	0.29
Sat Flow, veh/h	1753	1103	625	1753	602	1049	1682	1767	1497	1753	1516	275
Grp Volume(v), veh/h	103	0	260	90	0	362	45	347	62	175	0	391
Grp Sat Flow(s),veh/h/ln	1753	0	1728	1753	0	1652	1682	1767	1497	1753	0	1791
Q Serve(g_s), s	0.0	0.0	10.1	0.0	0.0	15.4	0.0	14.6	2.6	0.0	0.0	16.2
Cycle Q Clear(g_c), s	0.0	0.0	10.1	0.0	0.0	15.4	0.0	14.6	2.6	0.0	0.0	16.2
Prop In Lane	1.00		0.36	1.00		0.64	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	292	0	512	397	0	530	208	460	390	274	0	511
V/C Ratio(X)	0.35	0.00	0.51	0.23	0.00	0.68	0.22	0.75	0.16	0.64	0.00	0.77
Avail Cap(c_a), veh/h	292	0	512	397	0	530	208	460	390	274	0	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.7	0.0	23.6	25.5	0.0	23.9	34.6	27.6	23.1	34.2	0.0	26.5
Incr Delay (d2), s/veh	3.3	0.0	3.6	1.3	0.0	7.0	2.4	10.9	0.9	10.9	0.0	10.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	4.3	1.5	0.0	6.4	0.9	7.0	0.9	3.9	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.1	0.0	27.2	26.8	0.0	30.9	37.0	38.5	24.0	45.2	0.0	36.9
LnGrp LOS	D	A	C	C	A	C	D	D	C	D	A	D
Approach Vol, veh/h		363			452			454			566	
Approach Delay, s/veh		29.4			30.1			36.3			39.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	27.5	11.8	30.3	9.4	29.5	10.8	31.3
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.0	21.1	5.5	* 24	3.0	23.1	3.5	26.0
Max Q Clear Time (g_c+I1), s	2.0	16.6	2.0	12.1	2.0	18.2	2.0	17.4
Green Ext Time (p_c), s	0.1	0.8	0.0	1.0	0.0	0.9	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Notes

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



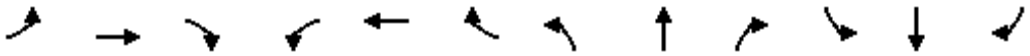
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	127	367	72	66	20	81	259	83	18	365	26
Future Volume (veh/h)	46	127	367	72	66	20	81	259	83	18	365	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1781	1781	1781	1856	1856	1856
Adj Flow Rate, veh/h	50	138	399	81	74	22	89	285	91	19	388	28
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.91	0.91	0.91	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	8	8	8	3	3	3
Cap, veh/h	573	172	497	193	565	168	340	564	180	366	745	54
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
Sat Flow, veh/h	1310	427	1235	882	1407	418	924	1294	413	999	1710	123
Grp Volume(v), veh/h	50	0	537	81	0	96	89	0	376	19	0	416
Grp Sat Flow(s),veh/h/ln	1310	0	1663	882	0	1825	924	0	1707	999	0	1833
Q Serve(g_s), s	2.0	0.0	22.8	7.1	0.0	2.7	6.2	0.0	12.8	1.1	0.0	13.3
Cycle Q Clear(g_c), s	4.7	0.0	22.8	30.0	0.0	2.7	19.5	0.0	12.8	13.9	0.0	13.3
Prop In Lane	1.00		0.74	1.00		0.23	1.00		0.24	1.00		0.07
Lane Grp Cap(c), veh/h	573	0	668	193	0	733	340	0	744	366	0	799
V/C Ratio(X)	0.09	0.00	0.80	0.42	0.00	0.13	0.26	0.00	0.51	0.05	0.00	0.52
Avail Cap(c_a), veh/h	610	0	715	218	0	785	340	0	744	366	0	799
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.6	0.0	21.1	34.4	0.0	15.1	23.6	0.0	16.3	21.4	0.0	16.5
Incr Delay (d2), s/veh	0.1	0.0	6.3	1.5	0.0	0.1	1.9	0.0	2.4	0.3	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	8.9	1.5	0.0	1.0	1.4	0.0	4.8	0.3	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	0.0	27.4	35.8	0.0	15.2	25.5	0.0	18.8	21.6	0.0	18.9
LnGrp LOS	B	A	C	D	A	B	C	A	B	C	A	B
Approach Vol, veh/h		587			177			465			435	
Approach Delay, s/veh		26.5			24.6			20.1			19.0	
Approach LOS		C			C			C			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.2		38.8		41.2		38.8				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 33		* 34		* 33		* 34				
Max Q Clear Time (g_c+I1), s		21.5		24.8		15.9		32.0				
Green Ext Time (p_c), s		2.0		2.5		2.2		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		22.5
HCM 6th LOS		C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	8	83	11	28	18	41	448	1	6	302	110
Future Volume (veh/h)	149	8	83	11	28	18	41	448	1	6	302	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	177	10	99	14	36	23	57	622	1	10	503	183
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.72	0.72	0.72	0.60	0.60	0.60
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	490	44	438	435	315	201	258	926	1	317	649	236
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	1344	147	1460	1264	1050	671	750	1852	3	795	1298	472
Grp Volume(v), veh/h	177	0	109	14	0	59	57	0	623	10	0	686
Grp Sat Flow(s),veh/h/ln	1344	0	1608	1264	0	1720	750	0	1855	795	0	1771
Q Serve(g_s), s	6.6	0.0	3.1	0.5	0.0	1.5	4.0	0.0	15.2	0.6	0.0	19.0
Cycle Q Clear(g_c), s	8.1	0.0	3.1	3.6	0.0	1.5	23.0	0.0	15.2	15.7	0.0	19.0
Prop In Lane	1.00		0.91	1.00		0.39	1.00		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	490	0	482	435	0	516	258	0	928	317	0	885
V/C Ratio(X)	0.36	0.00	0.23	0.03	0.00	0.11	0.22	0.00	0.67	0.03	0.00	0.77
Avail Cap(c_a), veh/h	490	0	482	435	0	516	258	0	928	317	0	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	0.0	15.8	17.1	0.0	15.2	21.6	0.0	11.3	17.2	0.0	12.2
Incr Delay (d2), s/veh	2.1	0.0	1.1	0.1	0.0	0.4	2.0	0.0	3.9	0.2	0.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.1	0.1	0.0	0.6	0.8	0.0	5.4	0.1	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.2	0.0	16.9	17.2	0.0	15.7	23.6	0.0	15.2	17.4	0.0	18.8
LnGrp LOS	C	A	B	B	A	B	C	A	B	B	A	B
Approach Vol, veh/h		286			73			680			696	
Approach Delay, s/veh		18.9			16.0			15.9			18.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		24.0		36.0		24.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		30.0		18.0		30.0		18.0				
Max Q Clear Time (g_c+I1), s		25.0		10.1		21.0		5.6				
Green Ext Time (p_c), s		1.8		0.7		3.0		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	182	95	300	127	88	545
Future Volume (veh/h)	182	95	300	127	88	545
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	1767	1767	1856	1856
Adj Flow Rate, veh/h	230	120	380	161	116	717
Peak Hour Factor	0.79	0.79	0.79	0.79	0.76	0.76
Percent Heavy Veh, %	2	2	9	9	3	3
Cap, veh/h	286	254	462	391	755	1286
Arrive On Green	0.16	0.16	0.26	0.26	0.36	0.69
Sat Flow, veh/h	1781	1585	1767	1497	1767	1856
Grp Volume(v), veh/h	230	120	380	161	116	717
Grp Sat Flow(s),veh/h/ln	1781	1585	1767	1497	1767	1856
Q Serve(g_s), s	9.3	5.2	15.2	6.7	0.0	14.5
Cycle Q Clear(g_c), s	9.3	5.2	15.2	6.7	0.0	14.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	286	254	462	391	755	1286
V/C Ratio(X)	0.81	0.47	0.82	0.41	0.15	0.56
Avail Cap(c_a), veh/h	475	423	775	657	755	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	28.6	26.1	22.9	15.2	5.8
Incr Delay (d2), s/veh	5.3	1.4	15.2	3.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	4.7	7.8	2.5	1.2	4.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.7	30.0	41.3	26.1	15.3	7.5
LnGrp LOS	D	C	D	C	B	A
Approach Vol, veh/h	350		541			833
Approach Delay, s/veh	33.7		36.8			8.6
Approach LOS	C		D			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		57.6		17.4	32.4	25.2
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 44		* 20	* 5.5	* 33
Max Q Clear Time (g_c+I1), s		16.5		11.3	2.0	17.2
Green Ext Time (p_c), s		5.1		0.7	0.0	2.4

Intersection Summary	
HCM 6th Ctrl Delay	22.5
HCM 6th LOS	C

Notes

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

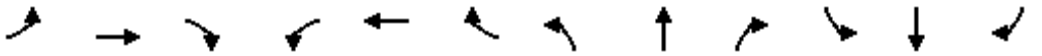
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	0	143	0	0	0	67	397	0	0	687	47
Future Volume (veh/h)	60	0	143	0	0	0	67	397	0	0	687	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	0	1856	1856	1856
Adj Flow Rate, veh/h	90	0	213	0	0	0	102	602	0	0	838	57
Peak Hour Factor	0.67	0.67	0.67	0.92	0.92	0.92	0.66	0.66	0.66	0.82	0.82	0.82
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	0	3	3	3
Cap, veh/h	341	0	267	0	322	0	323	1174	0	103	1213	1028
Arrive On Green	0.17	0.00	0.17	0.00	0.00	0.00	0.65	0.65	0.00	0.00	0.65	0.65
Sat Flow, veh/h	1384	0	1547	0	1870	0	597	1796	0	811	1856	1572
Grp Volume(v), veh/h	90	0	213	0	0	0	102	602	0	0	838	57
Grp Sat Flow(s),veh/h/ln	1384	0	1547	0	1870	0	597	1796	0	811	1856	1572
Q Serve(g_s), s	4.0	0.0	9.2	0.0	0.0	0.0	9.1	12.2	0.0	0.0	20.0	0.9
Cycle Q Clear(g_c), s	4.0	0.0	9.2	0.0	0.0	0.0	29.1	12.2	0.0	0.0	20.0	0.9
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	341	0	267	0	322	0	323	1174	0	103	1213	1028
V/C Ratio(X)	0.26	0.00	0.80	0.00	0.00	0.00	0.32	0.51	0.00	0.00	0.69	0.06
Avail Cap(c_a), veh/h	518	0	464	0	561	0	323	1174	0	103	1213	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	0.0	27.8	0.0	0.0	0.0	16.9	6.3	0.0	0.0	7.7	4.4
Incr Delay (d2), s/veh	0.4	0.0	5.5	0.0	0.0	0.0	2.6	1.6	0.0	0.0	3.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.7	0.0	0.0	0.0	1.4	3.8	0.0	0.0	6.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.1	0.0	33.3	0.0	0.0	0.0	19.4	7.9	0.0	0.0	10.9	4.5
LnGrp LOS	C	A	C	A	A	A	B	A	A	A	B	A
Approach Vol, veh/h		303			0			704			895	
Approach Delay, s/veh		31.1			0.0			9.6			10.5	
Approach LOS		C						A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	52.0	18.0	52.0	18.0
Change Period (Y+Rc), s	6.3	* 5.9	6.3	* 5.9
Max Green Setting (Gmax), s	36.8	* 21	36.8	* 21
Max Q Clear Time (g_c+I1), s	31.1	11.2	22.0	0.0
Green Ext Time (p_c), s	2.3	0.8	5.3	0.0

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

Notes

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



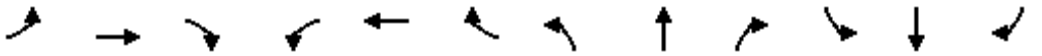
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	229	526	81	116	1079	147	79	58	26	161	168	417
Future Volume (veh/h)	229	526	81	116	1079	147	79	58	26	161	168	417
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	257	591	91	122	1136	155	85	62	28	185	193	479
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	3	3	3	1	1	1	1	1	1
Cap, veh/h	326	1419	218	435	1234	168	230	401	339	379	401	566
Arrive On Green	0.14	0.47	0.47	0.07	0.40	0.40	0.04	0.21	0.21	0.04	0.21	0.21
Sat Flow, veh/h	1739	3014	463	1767	3118	424	1795	1885	1598	1795	1885	1598
Grp Volume(v), veh/h	257	340	342	122	641	650	85	62	28	185	193	479
Grp Sat Flow(s),veh/h/ln	1739	1735	1743	1767	1763	1779	1795	1885	1598	1795	1885	1598
Q Serve(g_s), s	11.4	15.5	15.5	4.8	41.4	41.7	4.4	3.2	1.7	5.0	10.8	25.5
Cycle Q Clear(g_c), s	11.4	15.5	15.5	4.8	41.4	41.7	4.4	3.2	1.7	5.0	10.8	25.5
Prop In Lane	1.00		0.27	1.00		0.24	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	817	820	435	698	704	230	401	339	379	401	566
V/C Ratio(X)	0.79	0.42	0.42	0.28	0.92	0.92	0.37	0.15	0.08	0.49	0.48	0.85
Avail Cap(c_a), veh/h	326	817	820	435	698	704	230	401	339	379	401	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	20.9	20.9	18.8	34.4	34.5	35.6	38.5	37.9	39.1	41.5	35.7
Incr Delay (d2), s/veh	17.3	1.6	1.6	1.6	19.1	19.6	4.5	0.8	0.5	4.4	4.1	14.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	6.2	6.3	2.0	20.2	20.5	2.2	1.5	0.7	2.6	5.3	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	22.4	22.5	20.4	53.6	54.1	40.1	39.3	38.3	43.5	45.6	50.2
LnGrp LOS	D	C	C	C	D	D	D	D	D	D	D	D
Approach Vol, veh/h		939			1413			175			857	
Approach Delay, s/veh		29.4			50.9			39.5			47.7	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	33.0	13.0	64.0	10.0	33.0	22.0	55.0
Change Period (Y+Rc), s	5.0	7.5	5.0	7.5	5.0	7.5	5.0	7.5
Max Green Setting (Gmax), s	5.0	25.5	8.0	56.5	5.0	25.5	17.0	47.5
Max Q Clear Time (g_c+I1), s	7.0	5.2	6.8	17.5	6.4	27.5	13.4	43.7
Green Ext Time (p_c), s	0.0	0.3	0.0	4.0	0.0	0.0	0.2	2.5

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

Notes

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



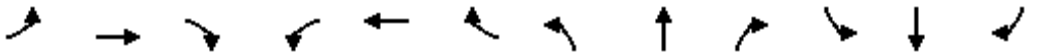
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	126	41	55	119	172	85	444	107	196	409	113
Future Volume (veh/h)	113	126	41	55	119	172	85	444	107	196	409	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	141	158	51	65	140	202	98	510	123	215	449	124
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.87	0.87	0.87	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	267	384	124	370	199	288	178	572	485	291	494	136
Arrive On Green	0.05	0.28	0.28	0.04	0.29	0.29	0.05	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1795	1365	441	1795	698	1006	1795	1885	1598	1795	1422	393
Grp Volume(v), veh/h	141	0	209	65	0	342	98	510	123	215	0	573
Grp Sat Flow(s),veh/h/ln	1795	0	1806	1795	0	1704	1795	1885	1598	1795	0	1815
Q Serve(g_s), s	0.0	0.0	8.6	0.0	0.0	16.3	0.6	23.5	5.3	4.5	0.0	27.4
Cycle Q Clear(g_c), s	0.0	0.0	8.6	0.0	0.0	16.3	0.6	23.5	5.3	4.5	0.0	27.4
Prop In Lane	1.00		0.24	1.00		0.59	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	267	0	508	370	0	487	178	572	485	291	0	630
V/C Ratio(X)	0.53	0.00	0.41	0.18	0.00	0.70	0.55	0.89	0.25	0.74	0.00	0.91
Avail Cap(c_a), veh/h	267	0	508	370	0	487	178	572	485	291	0	630
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	0.0	26.6	28.9	0.0	29.0	40.8	30.3	23.9	37.5	0.0	28.3
Incr Delay (d2), s/veh	7.3	0.0	2.5	1.0	0.0	8.2	11.8	18.8	1.3	15.5	0.0	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	3.8	1.2	0.0	7.3	2.6	12.8	2.0	5.4	0.0	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	0.0	29.0	29.9	0.0	37.3	52.6	49.0	25.2	53.1	0.0	47.8
LnGrp LOS	D	A	C	C	A	D	D	D	C	D	A	D
Approach Vol, veh/h		350			407			731			788	
Approach Delay, s/veh		35.6			36.1			45.5			49.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	34.0	9.8	31.9	11.3	38.0	10.4	31.3
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	8.9	27.6	3.5	* 26	4.9	31.6	3.1	26.0
Max Q Clear Time (g_c+I1), s	6.5	25.5	2.0	10.6	2.6	29.4	2.0	18.3
Green Ext Time (p_c), s	0.1	0.7	0.0	0.9	0.0	0.8	0.0	1.1

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

Notes

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



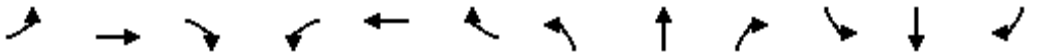
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	76	159	32	73	22	313	520	57	37	405	65
Future Volume (veh/h)	70	76	159	32	73	22	313	520	57	37	405	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	84	92	192	36	82	25	329	547	60	42	460	74
Peak Hour Factor	0.83	0.83	0.83	0.89	0.89	0.89	0.95	0.95	0.95	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	310	119	248	156	305	93	494	1031	113	443	978	157
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1287	540	1127	1104	1386	423	877	1669	183	820	1584	255
Grp Volume(v), veh/h	84	0	284	36	0	107	329	0	607	42	0	534
Grp Sat Flow(s),veh/h/ln	1287	0	1667	1104	0	1809	877	0	1852	820	0	1839
Q Serve(g_s), s	4.6	0.0	12.8	2.5	0.0	3.9	25.9	0.0	14.9	2.5	0.0	12.5
Cycle Q Clear(g_c), s	8.6	0.0	12.8	15.3	0.0	3.9	38.4	0.0	14.9	17.4	0.0	12.5
Prop In Lane	1.00		0.68	1.00		0.23	1.00		0.10	1.00		0.14
Lane Grp Cap(c), veh/h	310	0	367	156	0	398	494	0	1144	443	0	1136
V/C Ratio(X)	0.27	0.00	0.77	0.23	0.00	0.27	0.67	0.00	0.53	0.09	0.00	0.47
Avail Cap(c_a), veh/h	403	0	488	236	0	529	494	0	1144	443	0	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	29.3	36.5	0.0	25.9	18.6	0.0	8.7	13.7	0.0	8.2
Incr Delay (d2), s/veh	0.5	0.0	5.5	0.7	0.0	0.4	6.9	0.0	1.8	0.4	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	5.3	0.7	0.0	1.6	5.4	0.0	5.0	0.5	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	0.0	34.8	37.3	0.0	26.2	25.5	0.0	10.5	14.1	0.0	9.6
LnGrp LOS	C	A	C	D	A	C	C	A	B	B	A	A
Approach Vol, veh/h		368			143			936			576	
Approach Delay, s/veh		33.7			29.0			15.8			10.0	
Approach LOS		C			C			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.8		24.2		55.8		24.2				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 44		* 23		* 44		* 23				
Max Q Clear Time (g_c+I1), s		40.4		14.8		19.4		17.3				
Green Ext Time (p_c), s		1.7		1.2		3.5		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		18.3
HCM 6th LOS		B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	29	91	8	26	6	68	259	25	8	210	33
Future Volume (veh/h)	46	29	91	8	26	6	68	259	25	8	210	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	53	33	105	10	34	8	85	324	31	10	273	43
Peak Hour Factor	0.87	0.87	0.87	0.77	0.77	0.77	0.80	0.80	0.80	0.77	0.77	0.77
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	0	0	0
Cap, veh/h	608	147	466	510	541	127	462	740	71	433	694	109
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1386	400	1272	1261	1476	347	1080	1707	163	1043	1602	252
Grp Volume(v), veh/h	53	0	138	10	0	42	85	0	355	10	0	316
Grp Sat Flow(s),veh/h/ln	1386	0	1671	1261	0	1823	1080	0	1871	1043	0	1855
Q Serve(g_s), s	1.5	0.0	3.4	0.3	0.0	0.9	3.5	0.0	8.0	0.4	0.0	7.0
Cycle Q Clear(g_c), s	2.4	0.0	3.4	3.8	0.0	0.9	10.5	0.0	8.0	8.4	0.0	7.0
Prop In Lane	1.00		0.76	1.00		0.19	1.00		0.09	1.00		0.14
Lane Grp Cap(c), veh/h	608	0	613	510	0	668	462	0	811	433	0	804
V/C Ratio(X)	0.09	0.00	0.23	0.02	0.00	0.06	0.18	0.00	0.44	0.02	0.00	0.39
Avail Cap(c_a), veh/h	608	0	613	510	0	668	462	0	811	433	0	804
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.1	0.0	13.1	14.4	0.0	12.3	15.2	0.0	11.9	14.8	0.0	11.6
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.1	0.0	0.2	0.9	0.0	1.7	0.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	1.2	0.1	0.0	0.3	0.8	0.0	3.0	0.1	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	14.0	14.5	0.0	12.5	16.1	0.0	13.6	14.9	0.0	13.1
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		191			52			440			326	
Approach Delay, s/veh		13.8			12.9			14.1			13.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		28.0		32.0		28.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		26.0		22.0		26.0		22.0				
Max Q Clear Time (g_c+I1), s		12.5		5.4		10.4		5.8				
Green Ext Time (p_c), s		1.9		0.7		1.5		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			13.7									
HCM 6th LOS			B									

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	136	105	798	250	112	538
Future Volume (veh/h)	136	105	798	250	112	538
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	162	125	877	275	123	591
Peak Hour Factor	0.84	0.84	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	215	191	926	785	428	1400
Arrive On Green	0.12	0.12	0.49	0.49	0.18	0.74
Sat Flow, veh/h	1795	1598	1885	1598	1795	1885
Grp Volume(v), veh/h	162	125	877	275	123	591
Grp Sat Flow(s),veh/h/ln	1795	1598	1885	1598	1795	1885
Q Serve(g_s), s	7.0	6.0	35.4	8.5	0.0	9.4
Cycle Q Clear(g_c), s	7.0	6.0	35.4	8.5	0.0	9.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	215	191	926	785	428	1400
V/C Ratio(X)	0.75	0.65	0.95	0.35	0.29	0.42
Avail Cap(c_a), veh/h	440	391	952	807	428	1400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	33.6	19.4	12.5	26.7	3.9
Incr Delay (d2), s/veh	5.3	3.7	19.3	1.2	0.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	5.4	18.0	2.9	1.8	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.4	37.4	38.6	13.7	26.8	4.8
LnGrp LOS	D	D	D	B	C	A
Approach Vol, veh/h	287		1152			714
Approach Delay, s/veh	38.5		32.7			8.6
Approach LOS	D		C			A

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	65.0	15.0	20.1	44.9
Change Period (Y+Rc), s	* 5.6	* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s	* 49	* 20	* 3.4	* 40
Max Q Clear Time (g_c+I1), s	11.4	9.0	2.0	37.4
Green Ext Time (p_c), s	4.1	0.6	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Notes

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

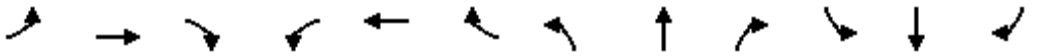
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	0	102	0	1	2	176	1020	2	1	662	70
Future Volume (veh/h)	76	0	102	0	1	2	176	1020	2	1	662	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	86	0	116	0	2	3	200	1159	2	1	697	74
Peak Hour Factor	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	1	1	1
Cap, veh/h	216	0	157	0	68	102	522	1440	2	270	1443	1223
Arrive On Green	0.10	0.00	0.10	0.00	0.10	0.10	0.77	0.77	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1374	0	1585	0	686	1029	704	1881	3	488	1885	1598
Grp Volume(v), veh/h	86	0	116	0	0	5	200	0	1161	1	697	74
Grp Sat Flow(s),veh/h/ln	1374	0	1585	0	0	1715	704	0	1885	488	1885	1598
Q Serve(g_s), s	5.3	0.0	6.4	0.0	0.0	0.2	13.3	0.0	33.9	0.1	12.4	1.0
Cycle Q Clear(g_c), s	5.5	0.0	6.4	0.0	0.0	0.2	25.7	0.0	33.9	34.0	12.4	1.0
Prop In Lane	1.00		1.00	0.00		0.60	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	0	157	0	0	170	522	0	1442	270	1443	1223
V/C Ratio(X)	0.40	0.00	0.74	0.00	0.00	0.03	0.38	0.00	0.80	0.00	0.48	0.06
Avail Cap(c_a), veh/h	376	0	336	0	0	364	522	0	1442	270	1443	1223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	39.4	0.0	0.0	36.6	8.7	0.0	6.5	16.8	3.9	2.6
Incr Delay (d2), s/veh	1.2	0.0	6.6	0.0	0.0	0.1	2.1	0.0	4.9	0.0	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	2.7	0.0	0.0	0.1	2.0	0.0	10.3	0.0	3.3	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.3	0.0	46.0	0.0	0.0	36.7	10.8	0.0	11.3	16.9	5.1	2.7
LnGrp LOS	D	A	D	A	A	D	B	A	B	B	A	A
Approach Vol, veh/h		202			5			1361			772	
Approach Delay, s/veh		43.6			36.7			11.3			4.9	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	75.2	14.8	75.2	14.8
Change Period (Y+Rc), s	6.3	* 5.9	6.3	* 5.9
Max Green Setting (Gmax), s	58.7	* 19	58.7	* 19
Max Q Clear Time (g_c+I1), s	35.9	8.4	36.0	2.2
Green Ext Time (p_c), s	12.8	0.6	4.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	12.0
HCM 6th LOS	B

Notes

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



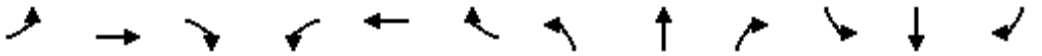
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	396	1351	113	64	841	148	105	183	78	134	100	239
Future Volume (veh/h)	396	1351	113	64	841	148	105	183	78	134	100	239
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	417	1422	119	68	895	157	111	193	82	141	105	252
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	464	1715	143	184	1070	188	289	372	315	250	366	627
Arrive On Green	0.20	0.51	0.51	0.04	0.35	0.35	0.04	0.20	0.20	0.04	0.20	0.20
Sat Flow, veh/h	1795	3347	279	1781	3022	530	1810	1900	1610	1781	1870	1585
Grp Volume(v), veh/h	417	758	783	68	526	526	111	193	82	141	105	252
Grp Sat Flow(s),veh/h/ln	1795	1791	1835	1781	1777	1775	1810	1900	1610	1781	1870	1585
Q Serve(g_s), s	19.9	42.9	43.6	2.9	32.6	32.6	5.0	10.9	5.2	5.0	5.7	13.7
Cycle Q Clear(g_c), s	19.9	42.9	43.6	2.9	32.6	32.6	5.0	10.9	5.2	5.0	5.7	13.7
Prop In Lane	1.00		0.15	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	464	918	940	184	629	629	289	372	315	250	366	627
V/C Ratio(X)	0.90	0.83	0.83	0.37	0.84	0.84	0.38	0.52	0.26	0.56	0.29	0.40
Avail Cap(c_a), veh/h	464	918	940	184	629	629	289	372	315	250	366	627
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.4	24.7	24.9	25.9	35.6	35.6	38.2	43.2	40.9	42.2	41.1	26.0
Incr Delay (d2), s/veh	23.0	8.4	8.6	5.6	12.5	12.5	3.8	5.1	2.0	8.9	2.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.7	18.5	19.3	1.4	15.4	15.4	3.1	5.5	2.2	2.0	2.8	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.5	33.1	33.5	31.5	48.0	48.1	42.0	48.3	42.9	51.1	43.1	28.0
LnGrp LOS	D	C	C	C	D	D	D	D	D	D	D	C
Approach Vol, veh/h		1958			1120			386			498	
Approach Delay, s/veh		37.6			47.1			45.3			37.7	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	31.0	10.0	69.0	10.0	31.0	29.0	50.0
Change Period (Y+Rc), s	5.0	7.5	5.0	7.5	5.0	7.5	5.0	7.5
Max Green Setting (Gmax), s	5.0	23.5	5.0	61.5	5.0	23.5	24.0	42.5
Max Q Clear Time (g_c+I1), s	7.0	12.9	4.9	45.6	7.0	15.7	21.9	34.6
Green Ext Time (p_c), s	0.0	0.8	0.0	8.8	0.0	0.8	0.3	3.7

Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

Appendix D

Long-Term Development Scenario Data



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	140	79	91	151	261	35	257	57	157	274	48
Future Volume (veh/h)	79	140	79	91	151	261	35	257	57	157	274	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1767	1767	1767	1841	1841	1841
Adj Flow Rate, veh/h	103	182	103	99	164	284	48	352	78	196	342	60
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.73	0.73	0.73	0.80	0.80	0.80
Percent Heavy Veh, %	4	4	4	4	4	4	9	9	9	4	4	4
Cap, veh/h	129	206	116	275	165	285	463	401	340	545	384	67
Arrive On Green	0.04	0.19	0.19	0.12	0.27	0.27	0.23	0.23	0.23	0.26	0.25	0.25
Sat Flow, veh/h	1753	1104	625	1753	605	1047	1682	1767	1497	1753	1525	268
Grp Volume(v), veh/h	103	0	285	99	0	448	48	352	78	196	0	402
Grp Sat Flow(s),veh/h/ln	1753	0	1728	1753	0	1652	1682	1767	1497	1753	0	1793
Q Serve(g_s), s	2.8	0.0	19.3	1.3	0.0	32.5	0.0	23.1	5.1	4.0	0.0	26.0
Cycle Q Clear(g_c), s	2.8	0.0	19.3	1.3	0.0	32.5	0.0	23.1	5.1	4.0	0.0	26.0
Prop In Lane	1.00		0.36	1.00		0.63	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	129	0	322	275	0	450	463	401	340	545	0	451
V/C Ratio(X)	0.80	0.00	0.89	0.36	0.00	1.00	0.10	0.88	0.23	0.36	0.00	0.89
Avail Cap(c_a), veh/h	143	0	457	275	0	450	463	760	644	545	0	771
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	47.6	46.8	0.0	43.6	35.1	44.7	37.8	33.2	0.0	43.3
Incr Delay (d2), s/veh	24.7	0.0	14.0	0.8	0.0	41.1	0.1	22.7	1.6	0.4	0.0	22.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	9.3	2.6	0.0	17.9	1.1	12.3	2.0	4.3	0.0	13.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	0.0	61.5	47.6	0.0	84.6	35.2	67.4	39.4	33.6	0.0	65.7
LnGrp LOS	F	A	E	D	A	F	D	E	D	C	A	E
Approach Vol, veh/h		388			547			478			598	
Approach Delay, s/veh		66.6			77.9			59.6			55.2	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.3	33.7	20.3	28.7	34.4	36.6	11.0	38.0
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.6	51.6	6.7	* 32	5.6	51.6	5.7	32.7
Max Q Clear Time (g_c+I1), s	6.0	25.1	3.3	21.3	2.0	28.0	4.8	34.5
Green Ext Time (p_c), s	0.0	2.2	0.1	1.1	0.0	2.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	64.6
HCM 6th LOS	E

Notes

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

Intersection	
Int Delay, s/veh	29.2

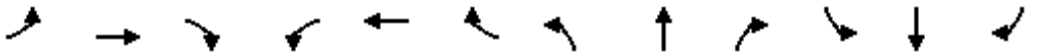
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	138	254	83	243	245	56
Future Vol, veh/h	138	254	83	243	245	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	60	60
Heavy Vehicles, %	3	3	1	1	3	3
Mvmt Flow	170	314	97	283	408	93

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	484	0	647	170
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	-	-	4.11	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.209	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1084	-	434	871
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1084	-	~ 388	871
Mov Cap-2 Maneuver	-	-	-	-	~ 388	-
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	77.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	388	871	-	-	1084	-
HCM Lane V/C Ratio	1.052	0.107	-	-	0.089	-
HCM Control Delay (s)	93.4	9.6	-	-	8.6	0
HCM Lane LOS	F	A	-	-	A	A
HCM 95th %tile Q(veh)	13.7	0.4	-	-	0.3	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	130	375	73	76	33	84	303	83	21	384	27
Future Volume (veh/h)	52	130	375	73	76	33	84	303	83	21	384	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1781	1781	1781	1856	1856	1856
Adj Flow Rate, veh/h	57	141	408	82	85	37	92	333	91	22	409	29
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.91	0.91	0.91	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	8	8	8	3	3	3
Cap, veh/h	398	125	361	90	367	160	454	734	201	468	933	66
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1279	427	1236	872	1255	546	906	1347	368	956	1712	121
Grp Volume(v), veh/h	57	0	549	82	0	122	92	0	424	22	0	438
Grp Sat Flow(s),veh/h/ln	1279	0	1663	872	0	1802	906	0	1715	956	0	1834
Q Serve(g_s), s	2.8	0.0	23.4	0.0	0.0	4.1	5.4	0.0	12.0	1.1	0.0	11.4
Cycle Q Clear(g_c), s	6.9	0.0	23.4	23.4	0.0	4.1	16.8	0.0	12.0	13.1	0.0	11.4
Prop In Lane	1.00		0.74	1.00		0.30	1.00		0.21	1.00		0.07
Lane Grp Cap(c), veh/h	398	0	486	90	0	527	454	0	935	468	0	999
V/C Ratio(X)	0.14	0.00	1.13	0.91	0.00	0.23	0.20	0.00	0.45	0.05	0.00	0.44
Avail Cap(c_a), veh/h	398	0	486	90	0	527	454	0	935	468	0	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	28.3	40.0	0.0	21.5	15.9	0.0	11.0	15.0	0.0	10.9
Incr Delay (d2), s/veh	0.2	0.0	81.1	66.4	0.0	0.2	1.0	0.0	1.6	0.2	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	19.3	3.2	0.0	1.6	1.1	0.0	4.1	0.2	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	109.4	106.4	0.0	21.7	16.9	0.0	12.6	15.1	0.0	12.3
LnGrp LOS	C	A	F	F	A	C	B	A	B	B	A	B
Approach Vol, veh/h		606			204			516			460	
Approach Delay, s/veh		101.4			55.7			13.4			12.4	
Approach LOS		F			E			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	50.0	30.0	50.0	30.0
Change Period (Y+Rc), s	* 6.4	* 6.6	* 6.4	* 6.6
Max Green Setting (Gmax), s	* 44	* 23	* 44	* 23
Max Q Clear Time (g_c+I1), s	18.8	25.4	15.1	25.4
Green Ext Time (p_c), s	3.0	0.0	2.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.8
HCM 6th LOS	D

Notes

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

Intersection	
Intersection Delay, s/veh	175.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	149	8	89	25	29	21	62	531	6	7	352	111
Future Vol, veh/h	149	8	89	25	29	21	62	531	6	7	352	111
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.72	0.72	0.72	0.60	0.60	0.60
Heavy Vehicles, %	2	2	2	4	4	4	3	3	3	3	3	3
Mvmt Flow	177	10	106	32	37	27	86	738	8	12	587	185
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	17.8	14.8	323.4	98.1
HCM LOS	C	B	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	10%	0%	95%	0%	46%	0%	2%	0%
Vol Thru, %	90%	0%	5%	0%	54%	0%	98%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	593	6	157	89	54	21	359	111
LT Vol	62	0	149	0	25	0	7	0
Through Vol	531	0	8	0	29	0	352	0
RT Vol	0	6	0	89	0	21	0	111
Lane Flow Rate	824	8	187	106	69	27	598	185
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	1.663	0.015	0.447	0.219	0.175	0.061	1.171	0.326
Departure Headway (Hd)	7.582	6.808	9.811	8.573	10.594	9.604	7.917	7.181
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	486	529	370	422	341	375	461	503
Service Time	5.282	4.508	7.511	6.273	8.294	7.304	5.617	4.881
HCM Lane V/C Ratio	1.695	0.015	0.505	0.251	0.202	0.072	1.297	0.368
HCM Control Delay	326.6	9.6	20.2	13.7	15.5	12.9	124.3	13.3
HCM Lane LOS	F	A	C	B	C	B	F	B
HCM 95th-tile Q	45.8	0	2.2	0.8	0.6	0.2	19.8	1.4

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	34	258	138	251	273	14
Future Vol, veh/h	34	258	138	251	273	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	78	78	82	82
Heavy Vehicles, %	2	2	10	10	6	6
Mvmt Flow	39	297	177	322	333	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1018	342	350	0	-	0
Stage 1	342	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.29	-	-	-
Pot Cap-1 Maneuver	263	701	1166	-	-	-
Stage 1	719	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	223	701	1166	-	-	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	3.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1166	-	596	-	-
HCM Lane V/C Ratio	0.152	-	0.563	-	-
HCM Control Delay (s)	8.6	-	18.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	3.5	-	-

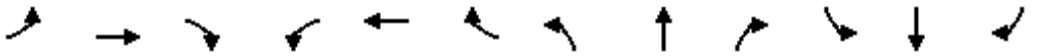
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	196	99	332	131	92	570
Future Volume (veh/h)	196	99	332	131	92	570
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1767	1767	1856	1856
Adj Flow Rate, veh/h	248	125	420	166	121	750
Peak Hour Factor	0.79	0.79	0.79	0.79	0.76	0.76
Percent Heavy Veh, %	2	2	9	9	3	3
Cap, veh/h	277	247	439	173	693	1397
Arrive On Green	0.16	0.16	0.73	0.73	0.34	0.75
Sat Flow, veh/h	1781	1585	1205	476	1767	1856
Grp Volume(v), veh/h	248	125	0	586	121	750
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1681	1767	1856
Q Serve(g_s), s	16.4	8.7	0.0	37.5	0.0	20.1
Cycle Q Clear(g_c), s	16.4	8.7	0.0	37.5	0.0	20.1
Prop In Lane	1.00	1.00		0.28	1.00	
Lane Grp Cap(c), veh/h	277	247	0	612	693	1397
V/C Ratio(X)	0.89	0.51	0.00	0.96	0.17	0.54
Avail Cap(c_a), veh/h	306	272	0	1042	693	1397
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	46.4	0.0	15.4	25.5	6.2
Incr Delay (d2), s/veh	25.3	1.6	0.0	27.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	7.8	0.0	9.9	2.3	6.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	75.1	48.1	0.0	42.6	25.5	7.6
LnGrp LOS	E	D	A	D	C	A
Approach Vol, veh/h	373		586			871
Approach Delay, s/veh	66.0		42.6			10.1
Approach LOS	E		D			B

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	95.9	24.1	46.6	49.3
Change Period (Y+Rc), s	* 5.6	* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s	* 88	* 21	* 8.4	* 74
Max Q Clear Time (g_c+I1), s	22.1	18.4	2.0	39.5
Green Ext Time (p_c), s	6.0	0.3	0.0	4.2

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Notes

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



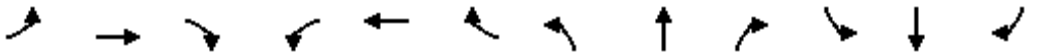
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	55	96	364	84	119	58	399	113	76	470	57
Future Volume (veh/h)	80	55	96	364	84	119	58	399	113	76	470	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	98	67	117	461	106	151	87	596	169	104	644	78
Peak Hour Factor	0.82	0.82	0.82	0.79	0.79	0.79	0.67	0.67	0.67	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	264	189	264	435	77	110	110	454	123	120	473	55
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	460	473	662	845	194	277	109	1110	302	130	1157	134
Grp Volume(v), veh/h	282	0	0	718	0	0	852	0	0	826	0	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1316	0	0	1520	0	0	1421	0	0
Q Serve(g_s), s	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.4	0.0	0.0	24.0	0.0	0.0	24.6	0.0	0.0	24.6	0.0	0.0
Prop In Lane	0.35		0.41	0.64		0.21	0.10		0.20	0.13		0.09
Lane Grp Cap(c), veh/h	717	0	0	623	0	0	687	0	0	648	0	0
V/C Ratio(X)	0.39	0.00	0.00	1.15	0.00	0.00	1.24	0.00	0.00	1.27	0.00	0.00
Avail Cap(c_a), veh/h	717	0	0	623	0	0	687	0	0	648	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	0.0	0.0	20.1	0.0	0.0	18.5	0.0	0.0	18.4	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	86.2	0.0	0.0	120.1	0.0	0.0	135.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	22.6	0.0	0.0	30.7	0.0	0.0	32.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	0.0	106.2	0.0	0.0	138.6	0.0	0.0	153.8	0.0	0.0
LnGrp LOS	B	A	A	F	A	A	F	A	A	F	A	A
Approach Vol, veh/h		282			718			852			826	
Approach Delay, s/veh		13.4			106.2			138.6			153.8	
Approach LOS		B			F			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.2	30.0	30.2	30.0
Change Period (Y+Rc), s	* 5.6	* 6	* 5.6	* 6
Max Green Setting (Gmax), s	* 24	* 24	* 25	* 24
Max Q Clear Time (g_c+I1), s	26.6	26.0	26.6	9.4
Green Ext Time (p_c), s	0.0	0.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	121.4
HCM 6th LOS	F

Notes

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



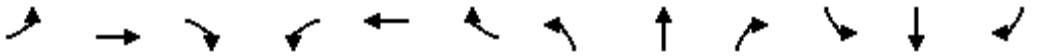
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	0	144	0	0	0	67	427	0	0	716	58
Future Volume (veh/h)	66	0	144	0	0	0	67	427	0	0	716	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	0	1856	1856	1856
Adj Flow Rate, veh/h	99	0	215	0	0	0	102	647	0	0	873	71
Peak Hour Factor	0.67	0.67	0.67	0.92	0.92	0.92	0.66	0.66	0.66	0.82	0.82	0.82
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	0	3	3	3
Cap, veh/h	278	0	244	0	295	0	482	1330	0	60	1374	1164
Arrive On Green	0.16	0.00	0.16	0.00	0.00	0.00	0.74	0.74	0.00	0.00	1.00	1.00
Sat Flow, veh/h	1384	0	1547	0	1870	0	570	1796	0	778	1856	1572
Grp Volume(v), veh/h	99	0	215	0	0	0	102	647	0	0	873	71
Grp Sat Flow(s),veh/h/ln	1384	0	1547	0	1870	0	570	1796	0	778	1856	1572
Q Serve(g_s), s	7.8	0.0	16.3	0.0	0.0	0.0	6.8	17.5	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.8	0.0	16.3	0.0	0.0	0.0	6.8	17.5	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	0	244	0	295	0	482	1330	0	60	1374	1164
V/C Ratio(X)	0.36	0.00	0.88	0.00	0.00	0.00	0.21	0.49	0.00	0.00	0.64	0.06
Avail Cap(c_a), veh/h	338	0	311	0	376	0	482	1330	0	60	1374	1164
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	45.8	0.0	49.4	0.0	0.0	0.0	4.9	6.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	20.3	0.0	0.0	0.0	1.0	1.3	0.0	0.0	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.0	7.7	0.0	0.0	0.0	0.8	6.1	0.0	0.0	0.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	69.8	0.0	0.0	0.0	5.9	7.6	0.0	0.0	2.3	0.1
LnGrp LOS	D	A	E	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		314			0			749			944	
Approach Delay, s/veh		62.5			0.0			7.4			2.1	
Approach LOS		E						A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	95.2	24.8	95.2	24.8
Change Period (Y+Rc), s	6.3	* 5.9	6.3	* 5.9
Max Green Setting (Gmax), s	83.7	* 24	83.7	* 24
Max Q Clear Time (g_c+I1), s	19.5	18.3	2.0	0.0
Green Ext Time (p_c), s	6.7	0.6	8.2	0.0

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

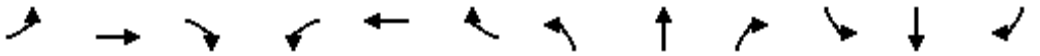
Notes

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



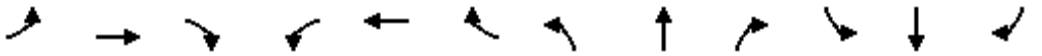
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1357	304	0	301	0	0	453	431
Future Volume (vph)	0	0	0	0	1357	304	0	301	0	0	453	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5			5.3			7.8	7.8
Lane Util. Factor					0.91			0.95			0.95	1.00
Frt					0.97			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					4898			3505			3539	1583
Flt Permitted					1.00			1.00			1.00	1.00
Satd. Flow (perm)					4898			3505			3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.85	0.85	0.85	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	0	1428	320	0	354	0	0	503	479
RTOR Reduction (vph)	0	0	0	0	34	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	1714	0	0	354	0	0	503	460
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	2%	2%	2%
Turn Type					NA			NA			NA	Perm
Protected Phases					4			2			6	
Permitted Phases												6
Actuated Green, G (s)					55.7			52.5			50.0	50.0
Effective Green, g (s)					55.7			52.5			50.0	50.0
Actuated g/C Ratio					0.46			0.44			0.42	0.42
Clearance Time (s)					6.5			5.3			7.8	7.8
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2273			1533			1474	659
v/s Ratio Prot					c0.35			0.10			0.14	
v/s Ratio Perm												c0.29
v/c Ratio					0.75			0.23			0.34	0.70
Uniform Delay, d1					26.5			21.1			23.8	28.8
Progression Factor					1.00			0.00			0.89	0.92
Incremental Delay, d2					1.5			0.3			0.6	5.3
Delay (s)					28.0			0.3			21.7	31.9
Level of Service					C			A			C	C
Approach Delay (s)		0.0			28.0			0.3			26.7	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1109	221	0	0	0	0	301	185	0	453	0
Future Volume (vph)	0	1109	221	0	0	0	0	301	185	0	453	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						7.8	7.8		5.3	
Lane Util. Factor		0.91						0.95	1.00		0.95	
Frt		0.98						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		4958						3471	1553		3539	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		4958						3471	1553		3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.92	0.92	0.92	0.76	0.76	0.76	0.70	0.70	0.70
Adj. Flow (vph)	0	1167	233	0	0	0	0	396	243	0	647	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	0	33	0	0	0
Lane Group Flow (vph)	0	1372	0	0	0	0	0	396	210	0	647	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type		NA						NA	Perm		NA	
Protected Phases		8						6			2	
Permitted Phases									6			
Actuated Green, G (s)		55.7						50.0	50.0		52.5	
Effective Green, g (s)		55.7						50.0	50.0		52.5	
Actuated g/C Ratio		0.46						0.42	0.42		0.44	
Clearance Time (s)		6.5						7.8	7.8		5.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2301						1446	647		1548	
v/s Ratio Prot		c0.28						0.11			c0.18	
v/s Ratio Perm									0.14			
v/c Ratio		0.60						0.27	0.32		0.42	
Uniform Delay, d1		23.8						23.0	23.6		23.2	
Progression Factor		1.00						1.00	1.00		0.24	
Incremental Delay, d2		0.4						0.5	1.3		0.8	
Delay (s)		24.2						23.5	24.9		6.4	
Level of Service		C						C	C		A	
Approach Delay (s)		24.2			0.0			24.1			6.4	
Approach LOS		C			A			C			A	

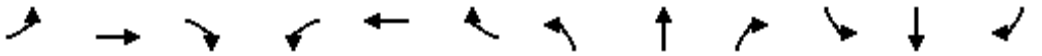
Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	326	550	93	150	1140	167	120	75	44	171	209	708
Future Volume (veh/h)	326	550	93	150	1140	167	120	75	44	171	209	708
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	366	618	104	158	1200	176	129	81	47	197	240	814
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	3	3	3	1	1	1	1	1	1
Cap, veh/h	195	1103	935	351	1865	272	149	511	433	363	511	433
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	385	1826	1547	725	3086	451	540	1885	1598	1272	1885	1598
Grp Volume(v), veh/h	366	618	104	158	683	693	129	81	47	197	240	814
Grp Sat Flow(s),veh/h/ln	385	1826	1547	725	1763	1774	540	1885	1598	1272	1885	1598
Q Serve(g_s), s	42.1	24.3	3.4	20.0	30.1	30.4	19.7	3.9	2.7	16.7	12.8	32.5
Cycle Q Clear(g_c), s	72.5	24.3	3.4	44.3	30.1	30.4	32.5	3.9	2.7	20.7	12.8	32.5
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	1103	935	351	1065	1072	149	511	433	363	511	433
V/C Ratio(X)	1.88	0.56	0.11	0.45	0.64	0.65	0.87	0.16	0.11	0.54	0.47	1.88
Avail Cap(c_a), veh/h	195	1103	935	351	1065	1072	149	511	433	363	511	433
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.4	14.2	10.1	27.5	15.3	15.4	53.2	33.3	32.9	41.2	36.6	43.8
Incr Delay (d2), s/veh	413.9	0.6	0.1	0.9	1.3	1.4	45.1	0.7	0.5	5.7	3.1	405.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.2	9.0	1.1	3.4	10.9	11.1	5.7	1.8	1.1	5.7	6.1	61.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	459.4	14.9	10.1	28.4	16.7	16.8	98.3	34.0	33.4	46.9	39.6	449.0
LnGrp LOS	F	B	B	C	B	B	F	C	C	D	D	F
Approach Vol, veh/h		1088			1534			257			1251	
Approach Delay, s/veh		163.9			17.9			66.1			307.2	
Approach LOS		F			B			E			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		80.0		40.0		80.0				
Change Period (Y+Rc), s		7.5		7.5		7.5		7.5				
Max Green Setting (Gmax), s		32.5		72.5		32.5		72.5				
Max Q Clear Time (g_c+I1), s		34.5		74.5		34.5		46.3				
Green Ext Time (p_c), s		0.0		0.0		0.0		11.4				

Intersection Summary												
HCM 6th Ctrl Delay			147.0									
HCM 6th LOS			F									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	159	46	69	140	204	94	456	118	249	416	113
Future Volume (veh/h)	113	159	46	69	140	204	94	456	118	249	416	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	141	199	58	81	165	240	108	524	136	274	457	124
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.87	0.87	0.87	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	145	229	67	298	175	254	330	585	496	430	498	135
Arrive On Green	0.05	0.16	0.16	0.13	0.25	0.25	0.15	0.31	0.31	0.19	0.35	0.35
Sat Flow, veh/h	1795	1403	409	1795	694	1009	1795	1885	1598	1795	1428	387
Grp Volume(v), veh/h	141	0	257	81	0	405	108	524	136	274	0	581
Grp Sat Flow(s),veh/h/ln	1795	0	1812	1795	0	1703	1795	1885	1598	1795	0	1815
Q Serve(g_s), s	5.4	0.0	16.6	0.1	0.0	28.0	2.0	31.9	7.7	10.2	0.0	36.8
Cycle Q Clear(g_c), s	5.4	0.0	16.6	0.1	0.0	28.0	2.0	31.9	7.7	10.2	0.0	36.8
Prop In Lane	1.00		0.23	1.00		0.59	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	145	0	295	298	0	429	330	585	496	430	0	633
V/C Ratio(X)	0.97	0.00	0.87	0.27	0.00	0.95	0.33	0.90	0.27	0.64	0.00	0.92
Avail Cap(c_a), veh/h	145	0	448	298	0	436	330	842	714	430	0	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.9	0.0	49.0	45.6	0.0	44.1	43.7	39.5	31.2	41.7	0.0	37.4
Incr Delay (d2), s/veh	65.5	0.0	11.3	0.5	0.0	29.4	0.6	18.9	1.4	3.1	0.0	20.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	8.2	2.1	0.0	14.9	2.8	17.2	3.1	7.4	0.0	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	121.4	0.0	60.3	46.1	0.0	73.5	44.3	58.4	32.6	44.8	0.0	57.8
LnGrp LOS	F	A	E	D	A	E	D	E	C	D	A	E
Approach Vol, veh/h		398			486			768			855	
Approach Delay, s/veh		82.0			68.9			51.9			53.7	
Approach LOS		F			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.9	43.6	21.6	25.9	24.3	48.3	12.0	35.5
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.6	53.6	6.7	* 30	5.6	53.6	5.7	30.7
Max Q Clear Time (g_c+I1), s	12.2	33.9	2.1	18.6	4.0	38.8	7.4	30.0
Green Ext Time (p_c), s	0.0	3.4	0.1	1.0	0.0	3.1	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

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

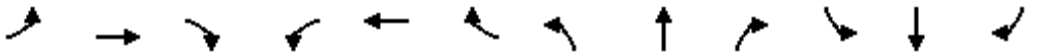
Intersection	
Int Delay, s/veh	7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	217	46	219	177	93
Future Vol, veh/h	310	217	46	219	177	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	-	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	83	83	76	76
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	352	247	55	264	233	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	599	0	726	352
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	374	-
Critical Hdwy	-	-	4.11	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.209	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	983	-	394	696
Stage 1	-	-	-	-	716	-
Stage 2	-	-	-	-	700	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	983	-	368	696
Mov Cap-2 Maneuver	-	-	-	-	368	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	700	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	368	696	-	-	983	-
HCM Lane V/C Ratio	0.633	0.176	-	-	0.056	-
HCM Control Delay (s)	30.2	11.3	-	-	8.9	0
HCM Lane LOS	D	B	-	-	A	A
HCM 95th %tile Q(veh)	4.2	0.6	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	87	167	33	79	25	325	548	58	49	456	71
Future Volume (veh/h)	72	87	167	33	79	25	325	548	58	49	456	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	87	105	201	37	89	28	342	577	61	56	518	81
Peak Hour Factor	0.83	0.83	0.83	0.89	0.89	0.89	0.95	0.95	0.95	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	320	134	256	156	320	101	432	1013	107	406	962	150
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1275	574	1099	1082	1375	433	826	1676	177	797	1592	249
Grp Volume(v), veh/h	87	0	306	37	0	117	342	0	638	56	0	599
Grp Sat Flow(s),veh/h/ln	1275	0	1673	1082	0	1807	826	0	1853	797	0	1840
Q Serve(g_s), s	4.8	0.0	13.7	2.7	0.0	4.2	33.1	0.0	16.6	3.6	0.0	15.3
Cycle Q Clear(g_c), s	9.0	0.0	13.7	16.4	0.0	4.2	48.4	0.0	16.6	20.3	0.0	15.3
Prop In Lane	1.00		0.66	1.00		0.24	1.00		0.10	1.00		0.14
Lane Grp Cap(c), veh/h	320	0	390	156	0	421	432	0	1120	406	0	1112
V/C Ratio(X)	0.27	0.00	0.78	0.24	0.00	0.28	0.79	0.00	0.57	0.14	0.00	0.54
Avail Cap(c_a), veh/h	395	0	489	221	0	529	432	0	1120	406	0	1112
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	28.8	36.5	0.0	25.2	23.5	0.0	9.5	15.7	0.0	9.3
Incr Delay (d2), s/veh	0.5	0.0	6.5	0.8	0.0	0.4	13.9	0.0	2.1	0.7	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	5.8	0.7	0.0	1.7	7.2	0.0	5.7	0.7	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.3	0.0	35.3	37.3	0.0	25.5	37.4	0.0	11.7	16.4	0.0	11.2
LnGrp LOS	C	A	D	D	A	C	D	A	B	B	A	B
Approach Vol, veh/h		393			154			980			655	
Approach Delay, s/veh		34.0			28.3			20.6			11.6	
Approach LOS		C			C			C			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		54.8		25.2		54.8		25.2				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 44		* 23		* 44		* 23				
Max Q Clear Time (g_c+I1), s		50.4		15.7		22.3		18.4				
Green Ext Time (p_c), s		0.0		1.2		4.0		0.3				

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

Notes

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

Intersection	
Intersection Delay, s/veh	28.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	31	112	17	27	8	77	333	40	12	306	33
Future Vol, veh/h	47	31	112	17	27	8	77	333	40	12	306	33
Peak Hour Factor	0.87	0.87	0.87	0.77	0.77	0.77	0.80	0.80	0.80	0.77	0.77	0.77
Heavy Vehicles, %	0	0	0	1	1	1	0	0	0	0	0	0
Mvmt Flow	54	36	129	22	35	10	96	416	50	16	397	43
Number of Lanes	0	1	1	0	1	1	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	12.1	11.9	40	23.7
HCM LOS	B	B	E	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	19%	0%	60%	0%	39%	0%	4%	0%
Vol Thru, %	81%	0%	40%	0%	61%	0%	96%	0%
Vol Right, %	0%	100%	0%	100%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	410	40	78	112	44	8	318	33
LT Vol	77	0	47	0	17	0	12	0
Through Vol	333	0	31	0	27	0	306	0
RT Vol	0	40	0	112	0	8	0	33
Lane Flow Rate	512	50	90	129	57	10	413	43
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.906	0.077	0.196	0.245	0.131	0.021	0.739	0.068
Departure Headway (Hd)	6.364	5.557	7.869	6.84	8.232	7.309	6.444	5.712
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	574	647	456	525	435	489	562	629
Service Time	4.076	3.269	5.614	4.584	5.987	5.063	4.158	3.426
HCM Lane V/C Ratio	0.892	0.077	0.197	0.246	0.131	0.02	0.735	0.068
HCM Control Delay	43.1	8.7	12.5	11.8	12.2	10.2	25.2	8.8
HCM Lane LOS	E	A	B	B	B	B	D	A
HCM 95th-tile Q	10.9	0.2	0.7	1	0.4	0.1	6.3	0.2

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	217	377	407	385	36
Future Vol, veh/h	16	217	377	407	385	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	87	87	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	18	241	433	468	405	38

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1758	424	443	0	-	0
Stage 1	424	-	-	-	-	-
Stage 2	1334	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	93	630	1122	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	57	630	1122	-	-	-
Mov Cap-2 Maneuver	~ -694	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	246	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	4.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1122	-	725	-	-
HCM Lane V/C Ratio	0.386	-	0.357	-	-
HCM Control Delay (s)	10.2	-	12.7	-	-
HCM Lane LOS	B	-	B	-	-
HCM 95th %tile Q(veh)	1.8	-	1.6	-	-

Notes

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

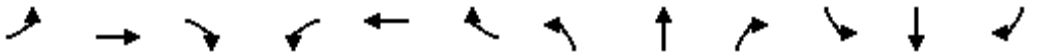
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	111	844	266	118	590
Future Volume (veh/h)	146	111	844	266	118	590
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	174	132	927	292	130	648
Peak Hour Factor	0.84	0.84	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	208	185	852	268	286	1494
Arrive On Green	0.12	0.12	1.00	1.00	0.13	0.79
Sat Flow, veh/h	1795	1598	1374	433	1795	1885
Grp Volume(v), veh/h	174	132	0	1219	130	648
Grp Sat Flow(s),veh/h/ln	1795	1598	0	1807	1795	1885
Q Serve(g_s), s	11.4	9.6	0.0	74.4	3.9	13.0
Cycle Q Clear(g_c), s	11.4	9.6	0.0	74.4	3.9	13.0
Prop In Lane	1.00	1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	208	185	0	1120	286	1494
V/C Ratio(X)	0.84	0.71	0.00	1.09	0.45	0.43
Avail Cap(c_a), veh/h	293	261	0	1120	286	1494
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	51.2	0.0	0.0	46.6	3.9
Incr Delay (d2), s/veh	13.7	5.3	0.0	54.1	0.4	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	8.6	0.0	16.8	3.5	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.7	56.4	0.0	54.1	47.0	4.8
LnGrp LOS	E	E	A	F	D	A
Approach Vol, veh/h	306		1219			778
Approach Delay, s/veh	61.7		54.1			11.9
Approach LOS	E		D			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		100.7		19.3	20.7	80.0
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 89		* 20	* 9.4	* 74
Max Q Clear Time (g_c+I1), s		15.0		13.4	5.9	76.4
Green Ext Time (p_c), s		4.8		0.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

Notes

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



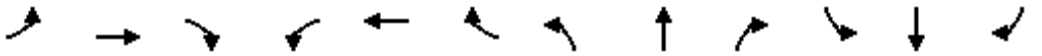
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	112	129	235	72	82	135	429	392	129	316	38
Future Volume (veh/h)	77	112	129	235	72	82	135	429	392	129	316	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	92	133	154	261	80	91	148	471	431	184	451	54
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.91	0.91	0.91	0.70	0.70	0.70
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	0	0	0
Cap, veh/h	192	264	260	371	99	99	144	296	257	180	322	36
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	303	690	680	713	260	260	175	705	613	243	766	86
Grp Volume(v), veh/h	379	0	0	432	0	0	1050	0	0	689	0	0
Grp Sat Flow(s),veh/h/ln	1673	0	0	1233	0	0	1493	0	0	1094	0	0
Q Serve(g_s), s	0.0	0.0	0.0	9.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.3	0.0	0.0	19.7	0.0	0.0	24.6	0.0	0.0	24.6	0.0	0.0
Prop In Lane	0.24		0.41	0.60		0.21	0.14		0.41	0.27		0.08
Lane Grp Cap(c), veh/h	715	0	0	569	0	0	697	0	0	537	0	0
V/C Ratio(X)	0.53	0.00	0.00	0.76	0.00	0.00	1.51	0.00	0.00	1.28	0.00	0.00
Avail Cap(c_a), veh/h	759	0	0	606	0	0	697	0	0	537	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	17.5	0.0	0.0	17.9	0.0	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	5.2	0.0	0.0	235.1	0.0	0.0	140.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	5.2	0.0	0.0	53.2	0.0	0.0	27.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	0.0	0.0	22.7	0.0	0.0	253.1	0.0	0.0	158.6	0.0	0.0
LnGrp LOS	B	A	A	C	A	A	F	A	A	F	A	A
Approach Vol, veh/h		379			432			1050			689	
Approach Delay, s/veh		14.9			22.7			253.1			158.6	
Approach LOS		B			C			F			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.2	28.4	30.2	28.4
Change Period (Y+Rc), s	* 5.6	* 6	* 5.6	* 6
Max Green Setting (Gmax), s	* 24	* 24	* 25	* 24
Max Q Clear Time (g_c+I1), s	26.6	21.7	26.6	12.3
Green Ext Time (p_c), s	0.0	0.6	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	153.1
HCM 6th LOS	F

Notes

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



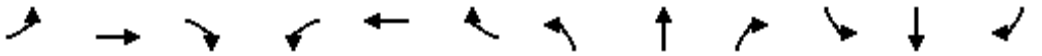
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	0	103	0	1	2	179	1071	2	1	714	79
Future Volume (veh/h)	88	0	103	0	1	2	179	1071	2	1	714	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	100	0	117	0	2	3	203	1217	2	1	752	83
Peak Hour Factor	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	1	1	1
Cap, veh/h	188	0	148	0	64	96	594	1515	2	267	1518	1286
Arrive On Green	0.09	0.00	0.09	0.00	0.09	0.09	0.80	0.80	0.80	1.00	1.00	1.00
Sat Flow, veh/h	1371	0	1585	0	686	1029	663	1882	3	461	1885	1598
Grp Volume(v), veh/h	100	0	117	0	0	5	203	0	1219	1	752	83
Grp Sat Flow(s),veh/h/ln	1371	0	1585	0	0	1715	663	0	1885	461	1885	1598
Q Serve(g_s), s	8.3	0.0	8.7	0.0	0.0	0.3	10.3	0.0	42.9	0.1	0.0	0.0
Cycle Q Clear(g_c), s	8.6	0.0	8.7	0.0	0.0	0.3	10.3	0.0	42.9	43.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.60	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	0	148	0	0	160	594	0	1517	267	1518	1286
V/C Ratio(X)	0.53	0.00	0.79	0.00	0.00	0.03	0.34	0.00	0.80	0.00	0.50	0.06
Avail Cap(c_a), veh/h	281	0	252	0	0	273	594	0	1517	267	1518	1286
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.4	0.0	53.2	0.0	0.0	49.5	3.3	0.0	6.5	9.5	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	9.1	0.0	0.0	0.1	1.6	0.0	4.6	0.0	1.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	3.8	0.0	0.0	0.1	1.3	0.0	13.7	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.7	0.0	62.3	0.0	0.0	49.5	4.9	0.0	11.1	9.6	1.2	0.1
LnGrp LOS	E	A	E	A	A	D	A	A	B	A	A	A
Approach Vol, veh/h		217			5			1422			836	
Approach Delay, s/veh		59.3			49.5			10.2			1.1	
Approach LOS		E			D			B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		102.9		17.1		102.9		17.1				
Change Period (Y+Rc), s		6.3		* 5.9		6.3		* 5.9				
Max Green Setting (Gmax), s		88.7		* 19		88.7		* 19				
Max Q Clear Time (g_c+I1), s		44.9		10.7		45.0		2.3				
Green Ext Time (p_c), s		19.9		0.5		6.2		0.0				

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

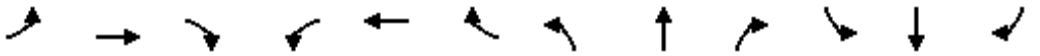
Notes

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



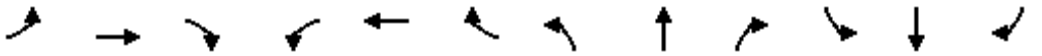
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1387	599	0	731	0	0	459	454
Future Volume (vph)	0	0	0	0	1387	599	0	731	0	0	459	454
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5			5.3			7.8	7.8
Lane Util. Factor					0.91			0.95			0.95	1.00
Frt					0.95			1.00			1.00	0.85
Flt Protected					1.00			1.00			1.00	1.00
Satd. Flow (prot)					4903			3610			3574	1599
Flt Permitted					1.00			1.00			1.00	1.00
Satd. Flow (perm)					4903			3610			3574	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.87	0.87	0.87	0.86	0.86	0.86
Adj. Flow (vph)	0	0	0	0	1541	666	0	840	0	0	534	528
RTOR Reduction (vph)	0	0	0	0	51	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	0	0	2156	0	0	840	0	0	534	509
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type					NA			NA			NA	Perm
Protected Phases					4			2			6	
Permitted Phases												6
Actuated Green, G (s)					55.7			52.5			50.0	50.0
Effective Green, g (s)					55.7			52.5			50.0	50.0
Actuated g/C Ratio					0.46			0.44			0.42	0.42
Clearance Time (s)					6.5			5.3			7.8	7.8
Vehicle Extension (s)					3.0			3.0			3.0	3.0
Lane Grp Cap (vph)					2275			1579			1489	666
v/s Ratio Prot					c0.44			0.23			0.15	
v/s Ratio Perm												c0.32
v/c Ratio					0.95			0.53			0.36	0.76
Uniform Delay, d1					30.8			24.7			24.0	30.0
Progression Factor					1.00			0.04			0.86	0.82
Incremental Delay, d2					9.3			1.1			0.6	7.8
Delay (s)					40.1			2.2			21.4	32.4
Level of Service					D			A			C	C
Approach Delay (s)		0.0			40.1			2.2			26.9	
Approach LOS		A			D			A			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1773	281	0	0	0	0	731	417	0	459	0
Future Volume (vph)	0	1773	281	0	0	0	0	731	417	0	459	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5						7.8	7.8		5.3	
Lane Util. Factor		0.91						0.95	1.00		0.95	
Frt		0.98						1.00	0.85		1.00	
Flt Protected		1.00						1.00	1.00		1.00	
Satd. Flow (prot)		5030						3574	1599		3574	
Flt Permitted		1.00						1.00	1.00		1.00	
Satd. Flow (perm)		5030						3574	1599		3574	
Peak-hour factor, PHF	0.91	0.91	0.91	0.92	0.92	0.92	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	1948	309	0	0	0	0	795	453	0	510	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	2240	0	0	0	0	0	795	434	0	510	0
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	1%	1%	1%	1%	1%	1%
Turn Type		NA						NA	Perm		NA	
Protected Phases		8						6			2	
Permitted Phases									6			
Actuated Green, G (s)		55.7						50.0	50.0		52.5	
Effective Green, g (s)		55.7						50.0	50.0		52.5	
Actuated g/C Ratio		0.46						0.42	0.42		0.44	
Clearance Time (s)		6.5						7.8	7.8		5.3	
Vehicle Extension (s)		3.0						3.0	3.0		3.0	
Lane Grp Cap (vph)		2334						1489	666		1563	
v/s Ratio Prot		c0.45						0.22			0.14	
v/s Ratio Perm									c0.27			
v/c Ratio		0.96						0.53	0.65		0.33	
Uniform Delay, d1		31.1						26.3	28.0		22.1	
Progression Factor		1.00						1.00	1.00		0.00	
Incremental Delay, d2		10.6						1.4	4.9		0.5	
Delay (s)		41.7						27.6	32.9		0.5	
Level of Service		D						C	C		A	
Approach Delay (s)		41.7			0.0			29.6			0.5	
Approach LOS		D			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.3
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	713	1429	166	96	889	164	137	224	112	160	125	425
Future Volume (veh/h)	713	1429	166	96	889	164	137	224	112	160	125	425
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	751	1504	175	102	946	174	144	236	118	168	132	447
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	335	1296	1098	60	2061	379	167	356	302	134	351	297
Arrive On Green	0.69	0.69	0.69	0.69	0.69	0.69	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	507	1885	1598	294	2997	551	848	1900	1610	1027	1870	1585
Grp Volume(v), veh/h	751	1504	175	102	561	559	144	236	118	168	132	447
Grp Sat Flow(s),veh/h/ln	507	1885	1598	294	1777	1771	848	1900	1610	1027	1870	1585
Q Serve(g_s), s	65.2	82.5	4.6	0.0	17.3	17.3	15.1	13.8	7.7	8.7	7.4	22.5
Cycle Q Clear(g_c), s	82.5	82.5	4.6	82.5	17.3	17.3	22.5	13.8	7.7	22.5	7.4	22.5
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	335	1296	1098	60	1222	1218	167	356	302	134	351	297
V/C Ratio(X)	2.24	1.16	0.16	1.70	0.46	0.46	0.86	0.66	0.39	1.25	0.38	1.50
Avail Cap(c_a), veh/h	335	1296	1098	60	1222	1218	167	356	302	134	351	297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	18.8	6.6	60.0	8.6	8.6	54.4	45.2	42.7	57.6	42.6	48.7
Incr Delay (d2), s/veh	567.2	81.1	0.1	376.0	0.3	0.3	41.0	9.3	3.8	160.3	3.1	243.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	62.7	56.7	1.3	8.0	5.5	5.5	6.2	7.2	3.3	10.0	3.6	28.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	600.4	99.9	6.6	436.0	8.8	8.8	95.4	54.6	46.5	217.9	45.7	292.4
LnGrp LOS	F	F	A	F	A	A	F	D	D	F	D	F
Approach Vol, veh/h		2430			1222			498			747	
Approach Delay, s/veh		247.9			44.5			64.5			232.1	
Approach LOS		F			D			E			F	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	30.0	90.0	30.0	90.0
Change Period (Y+Rc), s	7.5	7.5	7.5	7.5
Max Green Setting (Gmax), s	22.5	82.5	22.5	82.5
Max Q Clear Time (g_c+I1), s	24.5	84.5	24.5	84.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	176.1
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	140	79	91	151	261	35	257	57	157	274	48
Future Volume (veh/h)	79	140	79	91	151	261	35	257	57	157	274	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1767	1767	1767	1841	1841	1841
Adj Flow Rate, veh/h	103	182	103	99	164	284	48	352	78	196	342	60
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.73	0.73	0.73	0.80	0.80	0.80
Percent Heavy Veh, %	4	4	4	4	4	4	9	9	9	4	4	4
Cap, veh/h	384	319	180	372	591	501	207	469	397	275	442	78
Arrive On Green	0.05	0.29	0.29	0.07	0.32	0.32	0.04	0.27	0.27	0.06	0.29	0.29
Sat Flow, veh/h	1753	1104	625	1753	1841	1560	1682	1767	1497	1753	1525	268
Grp Volume(v), veh/h	103	0	285	99	164	284	48	352	78	196	0	402
Grp Sat Flow(s),veh/h/ln	1753	0	1728	1753	1841	1560	1682	1767	1497	1753	0	1793
Q Serve(g_s), s	0.0	0.0	11.4	0.0	5.4	12.2	0.0	14.8	3.3	0.9	0.0	16.6
Cycle Q Clear(g_c), s	0.0	0.0	11.4	0.0	5.4	12.2	0.0	14.8	3.3	0.9	0.0	16.6
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	384	0	499	372	591	501	207	469	397	275	0	520
V/C Ratio(X)	0.27	0.00	0.57	0.27	0.28	0.57	0.23	0.75	0.20	0.71	0.00	0.77
Avail Cap(c_a), veh/h	384	0	499	372	591	501	207	469	397	275	0	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	24.5	27.2	20.5	22.8	34.8	27.3	23.1	34.4	0.0	26.3
Incr Delay (d2), s/veh	1.7	0.0	4.7	1.7	1.2	4.6	2.6	10.6	1.1	14.6	0.0	10.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	4.9	1.7	2.3	4.7	1.0	7.1	1.2	4.6	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	0.0	29.2	29.0	21.7	27.4	37.4	37.9	24.2	49.0	0.0	37.0
LnGrp LOS	C	A	C	C	C	C	D	D	C	D	A	D
Approach Vol, veh/h		388			547			478			598	
Approach Delay, s/veh		28.3			26.0			35.6			40.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	27.9	12.0	29.7	9.4	29.9	10.4	31.3
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	5.0	21.5	5.7	* 23	3.0	23.5	3.1	26.0
Max Q Clear Time (g_c+I1), s	2.9	16.8	2.0	13.4	2.0	18.6	2.0	14.2
Green Ext Time (p_c), s	0.1	0.9	0.1	1.0	0.0	1.0	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	33.1
HCM 6th LOS	C

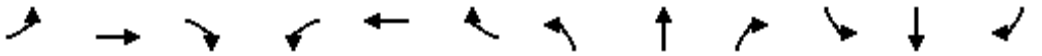
Notes

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	138	254	83	243	245	56
Future Volume (veh/h)	138	254	83	243	245	56
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1885	1885	1856	1856
Adj Flow Rate, veh/h	170	314	97	283	408	93
Peak Hour Factor	0.81	0.81	0.86	0.86	0.60	0.60
Percent Heavy Veh, %	3	3	1	1	3	3
Cap, veh/h	634	537	373	644	839	747
Arrive On Green	0.34	0.34	0.34	0.34	0.47	0.47
Sat Flow, veh/h	1856	1572	919	1885	1767	1572
Grp Volume(v), veh/h	170	314	97	283	408	93
Grp Sat Flow(s),veh/h/ln	1856	1572	919	1885	1767	1572
Q Serve(g_s), s	4.0	9.9	5.1	7.0	9.5	2.0
Cycle Q Clear(g_c), s	4.0	9.9	9.1	7.0	9.5	2.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	634	537	373	644	839	747
V/C Ratio(X)	0.27	0.58	0.26	0.44	0.49	0.12
Avail Cap(c_a), veh/h	634	537	373	644	839	747
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.3	16.2	17.6	15.3	10.8	8.8
Incr Delay (d2), s/veh	1.0	4.6	1.7	2.2	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	3.6	1.1	2.9	3.2	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.4	20.8	19.3	17.5	12.8	9.1
LnGrp LOS	B	C	B	B	B	A
Approach Vol, veh/h	484			380	501	
Approach Delay, s/veh	18.9			17.9	12.1	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	34.0	26.0	26.0
Change Period (Y+Rc), s	5.5	5.5	5.5
Max Green Setting (Gmax), s	28.5	20.5	20.5
Max Q Clear Time (g_c+I1), s	11.5	11.9	11.1
Green Ext Time (p_c), s	1.4	1.3	1.3

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B



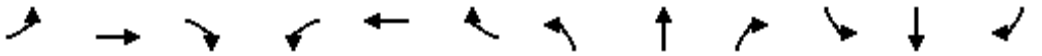
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	130	375	73	76	33	84	303	83	21	384	27
Future Volume (veh/h)	52	130	375	73	76	33	84	303	83	21	384	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1900	1900	1900	1781	1781	1781	1856	1856	1856
Adj Flow Rate, veh/h	57	141	408	82	85	37	92	333	91	22	409	29
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.91	0.91	0.91	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	0	0	0	8	8	8	3	3	3
Cap, veh/h	554	167	483	190	491	214	313	551	151	316	701	50
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1279	427	1236	872	1255	546	906	1347	368	956	1712	121
Grp Volume(v), veh/h	57	0	549	82	0	122	92	0	424	22	0	438
Grp Sat Flow(s),veh/h/ln	1279	0	1663	872	0	1802	906	0	1715	956	0	1834
Q Serve(g_s), s	2.0	0.0	19.5	5.9	0.0	2.9	5.7	0.0	12.6	1.2	0.0	12.1
Cycle Q Clear(g_c), s	4.9	0.0	19.5	25.4	0.0	2.9	17.8	0.0	12.6	13.8	0.0	12.1
Prop In Lane	1.00		0.74	1.00		0.30	1.00		0.21	1.00		0.07
Lane Grp Cap(c), veh/h	554	0	650	190	0	704	313	0	702	316	0	750
V/C Ratio(X)	0.10	0.00	0.84	0.43	0.00	0.17	0.29	0.00	0.60	0.07	0.00	0.58
Avail Cap(c_a), veh/h	554	0	650	190	0	704	313	0	702	316	0	750
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.5	0.0	18.0	29.7	0.0	12.9	21.8	0.0	15.1	20.5	0.0	14.9
Incr Delay (d2), s/veh	0.4	0.0	12.8	7.0	0.0	0.5	2.4	0.0	3.8	0.4	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	8.4	1.5	0.0	1.1	1.3	0.0	4.8	0.3	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.9	0.0	30.8	36.7	0.0	13.5	24.2	0.0	18.9	20.9	0.0	18.2
LnGrp LOS	B	A	C	D	A	B	C	A	B	C	A	B
Approach Vol, veh/h		606			204			516			460	
Approach Delay, s/veh		29.3			22.8			19.8			18.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.0		32.0		33.0		32.0				
Change Period (Y+Rc), s		* 6.4		* 6.6		* 6.4		* 6.6				
Max Green Setting (Gmax), s		* 27		* 25		* 27		* 25				
Max Q Clear Time (g_c+I1), s		19.8		21.5		15.8		27.4				
Green Ext Time (p_c), s		1.6		1.3		1.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		23.0
HCM 6th LOS		C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	8	89	25	29	21	62	531	6	7	352	111
Future Volume (veh/h)	149	8	89	25	29	21	62	531	6	7	352	111
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1841	1841	1841	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	177	10	106	32	37	27	86	738	8	12	587	185
Peak Hour Factor	0.84	0.84	0.84	0.78	0.78	0.78	0.72	0.72	0.72	0.60	0.60	0.60
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	492	42	448	435	302	220	256	998	11	289	737	232
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.55	0.55	0.55	0.55	0.55	0.55
Sat Flow, veh/h	1338	138	1468	1256	989	722	692	1832	20	709	1353	426
Grp Volume(v), veh/h	177	0	116	32	0	64	86	0	746	12	0	772
Grp Sat Flow(s),veh/h/ln	1338	0	1606	1256	0	1711	692	0	1852	709	0	1779
Q Serve(g_s), s	6.6	0.0	3.2	1.2	0.0	1.6	6.8	0.0	18.4	0.8	0.0	20.9
Cycle Q Clear(g_c), s	8.2	0.0	3.2	4.4	0.0	1.6	27.8	0.0	18.4	19.2	0.0	20.9
Prop In Lane	1.00		0.91	1.00		0.42	1.00		0.01	1.00		0.24
Lane Grp Cap(c), veh/h	492	0	490	435	0	522	256	0	1009	289	0	969
V/C Ratio(X)	0.36	0.00	0.24	0.07	0.00	0.12	0.34	0.00	0.74	0.04	0.00	0.80
Avail Cap(c_a), veh/h	492	0	490	435	0	522	256	0	1009	289	0	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	15.6	17.3	0.0	15.1	22.1	0.0	10.4	17.7	0.0	11.0
Incr Delay (d2), s/veh	2.0	0.0	1.1	0.3	0.0	0.5	3.5	0.0	4.9	0.3	0.0	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	1.2	0.3	0.0	0.6	1.2	0.0	6.4	0.1	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	0.0	16.8	17.6	0.0	15.5	25.7	0.0	15.3	18.0	0.0	17.7
LnGrp LOS	C	A	B	B	A	B	C	A	B	B	A	B
Approach Vol, veh/h		293			96			832			784	
Approach Delay, s/veh		18.8			16.2			16.3			17.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.2		22.8		37.2		22.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		32.7		18.3		32.7		18.3				
Max Q Clear Time (g_c+I1), s		29.8		10.2		22.9		6.4				
Green Ext Time (p_c), s		1.5		0.7		3.6		0.2				

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

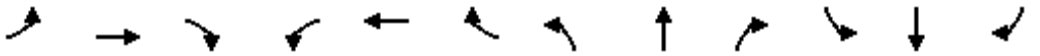
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	196	99	332	131	92	570
Future Volume (veh/h)	196	99	332	131	92	570
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1767	1767	1856	1856
Adj Flow Rate, veh/h	248	125	420	166	121	750
Peak Hour Factor	0.79	0.79	0.79	0.79	0.76	0.76
Percent Heavy Veh, %	2	2	9	9	3	3
Cap, veh/h	447	398	872	739	588	1163
Arrive On Green	0.25	0.25	0.99	0.99	0.07	0.63
Sat Flow, veh/h	1781	1585	1767	1497	1767	1856
Grp Volume(v), veh/h	248	125	420	166	121	750
Grp Sat Flow(s),veh/h/ln	1781	1585	1767	1497	1767	1856
Q Serve(g_s), s	10.9	5.8	0.5	0.2	0.0	22.8
Cycle Q Clear(g_c), s	10.9	5.8	0.5	0.2	0.0	22.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	447	398	872	739	588	1163
V/C Ratio(X)	0.55	0.31	0.48	0.22	0.21	0.64
Avail Cap(c_a), veh/h	447	398	872	739	588	1163
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	27.4	0.3	0.3	11.3	10.5
Incr Delay (d2), s/veh	4.9	2.1	1.9	0.7	0.8	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	5.7	0.6	0.2	1.3	8.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	29.5	2.2	1.0	12.1	13.3
LnGrp LOS	C	C	A	A	B	B
Approach Vol, veh/h	373		586			871
Approach Delay, s/veh	32.6		1.9			13.1
Approach LOS	C		A			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		62.0		28.0	12.0	50.0
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 56		* 23	* 6.4	* 44
Max Q Clear Time (g_c+I1), s		24.8		12.9	2.0	2.5
Green Ext Time (p_c), s		5.6		0.8	0.0	3.2

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

Notes

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



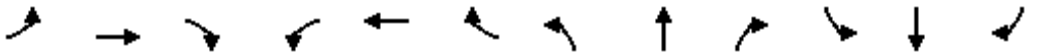
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	55	96	364	84	119	58	399	113	76	470	57
Future Volume (veh/h)	80	55	96	364	84	119	58	399	113	76	470	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	98	67	117	461	106	151	87	596	169	104	644	78
Peak Hour Factor	0.82	0.82	0.82	0.79	0.79	0.79	0.67	0.67	0.67	0.73	0.73	0.73
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	3	3	3
Cap, veh/h	355	317	269	527	164	233	174	793	941	247	697	84
Arrive On Green	0.10	0.17	0.17	0.17	0.24	0.24	0.04	0.43	0.43	0.04	0.43	0.43
Sat Flow, veh/h	1781	1870	1585	1767	692	986	1767	1856	1572	1767	1624	197
Grp Volume(v), veh/h	98	67	117	461	0	257	87	596	169	104	0	722
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1767	0	1678	1767	1856	1572	1767	0	1820
Q Serve(g_s), s	5.1	3.7	8.0	20.5	0.0	16.6	3.3	32.6	5.8	4.0	0.0	45.1
Cycle Q Clear(g_c), s	5.1	3.7	8.0	20.5	0.0	16.6	3.3	32.6	5.8	4.0	0.0	45.1
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	355	317	269	527	0	396	174	793	941	247	0	781
V/C Ratio(X)	0.28	0.21	0.43	0.88	0.00	0.65	0.50	0.75	0.18	0.42	0.00	0.92
Avail Cap(c_a), veh/h	355	317	269	527	0	396	174	793	941	247	0	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.9	43.0	44.7	35.8	0.0	41.4	27.3	29.0	10.9	23.0	0.0	32.4
Incr Delay (d2), s/veh	1.9	1.5	5.0	18.2	0.0	8.0	9.9	6.5	0.4	5.2	0.0	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.8	3.4	5.2	0.0	7.5	1.8	15.1	2.0	2.0	0.0	23.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	44.5	49.8	53.9	0.0	49.4	37.2	35.5	11.3	28.2	0.0	50.7
LnGrp LOS	D	D	D	D	A	D	D	D	B	C	A	D
Approach Vol, veh/h		282			718			852			826	
Approach Delay, s/veh		43.7			52.3			30.9			47.9	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	57.2	18.0	34.4	10.8	57.0	26.0	26.4
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 6	5.5	* 5.6	5.5	* 6
Max Green Setting (Gmax), s	5.1	* 51	12.5	* 28	5.3	* 51	20.5	* 20
Max Q Clear Time (g_c+I1), s	5.3	47.1	7.1	18.6	6.0	34.6	22.5	10.0
Green Ext Time (p_c), s	0.0	1.9	0.1	0.9	0.0	3.8	0.0	0.4

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

Notes

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



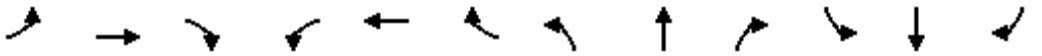
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	0	144	0	0	0	67	427	0	0	716	58
Future Volume (veh/h)	66	0	144	0	0	0	67	427	0	0	716	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	0	1856	1856	1856
Adj Flow Rate, veh/h	99	0	215	0	0	0	102	647	0	0	873	71
Peak Hour Factor	0.67	0.67	0.67	0.92	0.92	0.92	0.66	0.66	0.66	0.82	0.82	0.82
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	0	3	3	3
Cap, veh/h	403	0	361	0	436	0	440	1134	0	80	1171	992
Arrive On Green	0.23	0.00	0.23	0.00	0.00	0.00	0.63	0.63	0.00	0.00	1.00	1.00
Sat Flow, veh/h	1384	0	1547	0	1870	0	570	1796	0	778	1856	1572
Grp Volume(v), veh/h	99	0	215	0	0	0	102	647	0	0	873	71
Grp Sat Flow(s),veh/h/ln	1384	0	1547	0	1870	0	570	1796	0	778	1856	1572
Q Serve(g_s), s	5.3	0.0	11.1	0.0	0.0	0.0	7.2	18.7	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	11.1	0.0	0.0	0.0	7.2	18.7	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	403	0	361	0	436	0	440	1134	0	80	1171	992
V/C Ratio(X)	0.25	0.00	0.60	0.00	0.00	0.00	0.23	0.57	0.00	0.00	0.75	0.07
Avail Cap(c_a), veh/h	403	0	361	0	436	0	440	1134	0	80	1171	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	30.7	0.0	0.0	0.0	7.5	9.6	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	7.1	0.0	0.0	0.0	1.2	2.1	0.0	0.0	4.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	4.8	0.0	0.0	0.0	0.9	6.8	0.0	0.0	1.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.9	0.0	37.8	0.0	0.0	0.0	8.7	11.7	0.0	0.0	4.3	0.1
LnGrp LOS	C	A	D	A	A	A	A	B	A	A	A	A
Approach Vol, veh/h		314			0			749			944	
Approach Delay, s/veh		35.3			0.0			11.3			4.0	
Approach LOS		D						B			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		63.1		26.9		63.1		26.9				
Change Period (Y+Rc), s		6.3		* 5.9		6.3		* 5.9				
Max Green Setting (Gmax), s		56.8		* 21		56.8		* 21				
Max Q Clear Time (g_c+I1), s		20.7		13.1		2.0		0.0				
Green Ext Time (p_c), s		6.4		0.8		8.1		0.0				

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

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	326	550	93	150	1140	167	120	75	44	171	209	708
Future Volume (veh/h)	326	550	93	150	1140	167	120	75	44	171	209	708
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1856	1856	1856	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	366	618	104	158	1200	176	129	81	47	197	240	814
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.93	0.93	0.93	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	3	3	3	1	1	1	1	1	1
Cap, veh/h	694	1587	708	444	1172	523	183	382	324	348	382	652
Arrive On Green	0.21	0.46	0.46	0.08	0.33	0.33	0.04	0.20	0.20	0.04	0.20	0.20
Sat Flow, veh/h	3374	3469	1547	1767	3526	1572	1795	1885	1598	1795	1885	1598
Grp Volume(v), veh/h	366	618	104	158	1200	176	129	81	47	197	240	814
Grp Sat Flow(s),veh/h/ln	1687	1735	1547	1767	1763	1572	1795	1885	1598	1795	1885	1598
Q Serve(g_s), s	11.6	14.1	4.7	6.9	39.9	10.1	5.1	4.3	2.9	5.1	14.0	24.3
Cycle Q Clear(g_c), s	11.6	14.1	4.7	6.9	39.9	10.1	5.1	4.3	2.9	5.1	14.0	24.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	694	1587	708	444	1172	523	183	382	324	348	382	652
V/C Ratio(X)	0.53	0.39	0.15	0.36	1.02	0.34	0.71	0.21	0.15	0.57	0.63	1.25
Avail Cap(c_a), veh/h	694	1587	708	444	1172	523	183	382	324	348	382	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.4	21.5	18.9	22.7	40.1	30.1	42.3	39.9	39.3	41.2	43.7	35.5
Incr Delay (d2), s/veh	2.9	0.7	0.4	2.2	32.5	1.7	20.5	1.3	0.9	6.5	7.6	124.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	5.5	1.7	3.0	21.5	3.9	2.2	2.1	1.2	3.3	7.1	40.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	22.2	19.4	24.9	72.5	31.8	62.7	41.1	40.3	47.7	51.4	159.5
LnGrp LOS	D	C	B	C	F	C	E	D	D	D	D	F
Approach Vol, veh/h		1088			1534			257			1251	
Approach Delay, s/veh		29.7			62.9			51.8			121.1	
Approach LOS		C			E			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	31.8	15.2	62.4	10.6	31.8	30.2	47.4
Change Period (Y+Rc), s	5.5	7.5	5.5	7.5	5.5	7.5	5.5	7.5
Max Green Setting (Gmax), s	5.1	24.3	9.7	54.9	5.1	24.3	24.7	39.9
Max Q Clear Time (g_c+I1), s	7.1	6.3	8.9	16.1	7.1	26.3	13.6	41.9
Green Ext Time (p_c), s	0.0	0.4	0.0	4.4	0.0	0.0	0.9	0.0

Intersection Summary	
HCM 6th Ctrl Delay	71.1
HCM 6th LOS	E

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	159	46	69	140	204	94	456	118	249	416	113
Future Volume (veh/h)	113	159	46	69	140	204	94	456	118	249	416	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	141	199	58	81	165	240	108	524	136	274	457	124
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.87	0.87	0.87	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	301	302	88	285	456	386	258	613	520	345	508	138
Arrive On Green	0.05	0.22	0.22	0.06	0.24	0.24	0.09	0.33	0.33	0.12	0.36	0.36
Sat Flow, veh/h	1795	1403	409	1795	1885	1598	1795	1885	1598	1795	1428	387
Grp Volume(v), veh/h	141	0	257	81	165	240	108	524	136	274	0	581
Grp Sat Flow(s),veh/h/ln	1795	0	1812	1795	1885	1598	1795	1885	1598	1795	0	1815
Q Serve(g_s), s	0.0	0.0	11.8	0.0	6.6	12.2	0.0	23.6	5.7	6.6	0.0	27.6
Cycle Q Clear(g_c), s	0.0	0.0	11.8	0.0	6.6	12.2	0.0	23.6	5.7	6.6	0.0	27.6
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	301	0	390	285	456	386	258	613	520	345	0	646
V/C Ratio(X)	0.47	0.00	0.66	0.28	0.36	0.62	0.42	0.85	0.26	0.79	0.00	0.90
Avail Cap(c_a), veh/h	301	0	390	285	456	386	258	613	520	345	0	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.0	0.0	32.6	35.7	28.7	30.8	37.6	28.7	22.6	36.0	0.0	27.7
Incr Delay (d2), s/veh	5.2	0.0	8.4	2.5	2.2	7.3	5.0	14.2	1.2	16.9	0.0	17.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	5.8	1.8	3.1	5.2	2.5	12.2	2.2	6.8	0.0	14.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	0.0	41.1	38.2	30.9	38.1	42.5	42.9	23.9	53.0	0.0	45.5
LnGrp LOS	D	A	D	D	C	D	D	D	C	D	A	D
Approach Vol, veh/h		398			486			768			855	
Approach Delay, s/veh		40.8			35.7			39.5			47.9	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	36.0	11.8	25.9	14.5	38.8	10.4	27.3
Change Period (Y+Rc), s	6.4	6.4	6.3	* 6.3	6.4	6.4	6.3	5.3
Max Green Setting (Gmax), s	10.9	29.6	5.5	* 20	8.1	32.4	3.1	22.0
Max Q Clear Time (g_c+I1), s	8.6	25.6	2.0	13.8	2.0	29.6	2.0	14.2
Green Ext Time (p_c), s	0.2	1.3	0.0	0.6	0.1	1.0	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	41.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	310	217	46	219	177	93
Future Volume (veh/h)	310	217	46	219	177	93
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1900	1900
Adj Flow Rate, veh/h	352	247	55	264	233	122
Peak Hour Factor	0.88	0.88	0.83	0.83	0.76	0.76
Percent Heavy Veh, %	1	1	1	1	0	0
Cap, veh/h	833	706	379	833	739	657
Arrive On Green	0.44	0.44	0.44	0.44	0.41	0.41
Sat Flow, veh/h	1885	1598	826	1885	1810	1610
Grp Volume(v), veh/h	352	247	55	264	233	122
Grp Sat Flow(s),veh/h/ln	1885	1598	826	1885	1810	1610
Q Serve(g_s), s	7.7	6.1	2.9	5.5	5.2	2.9
Cycle Q Clear(g_c), s	7.7	6.1	10.6	5.5	5.2	2.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	833	706	379	833	739	657
V/C Ratio(X)	0.42	0.35	0.15	0.32	0.32	0.19
Avail Cap(c_a), veh/h	833	706	379	833	739	657
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.5	11.1	15.1	10.9	12.1	11.4
Incr Delay (d2), s/veh	1.6	1.4	0.8	1.0	1.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	1.9	0.5	2.0	1.9	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.1	12.4	16.0	11.9	13.2	12.0
LnGrp LOS	B	B	B	B	B	B
Approach Vol, veh/h	599			319	355	
Approach Delay, s/veh	12.8			12.6	12.8	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	29.0	31.0	31.0
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	24.5	26.5	26.5
Max Q Clear Time (g_c+I1), s	7.2	9.7	12.6
Green Ext Time (p_c), s	0.9	2.5	1.4

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

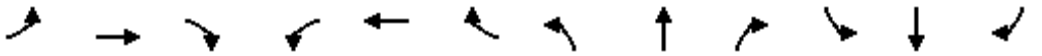
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	87	167	33	79	25	325	548	58	49	456	71
Future Volume (veh/h)	72	87	167	33	79	25	325	548	58	49	456	71
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	87	105	201	37	89	28	342	577	61	56	518	81
Peak Hour Factor	0.83	0.83	0.83	0.89	0.89	0.89	0.95	0.95	0.95	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	1	1	1
Cap, veh/h	346	149	286	182	357	112	411	998	106	385	948	148
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.60	0.60	0.60	0.60	0.60	0.60
Sat Flow, veh/h	1275	574	1099	1082	1375	433	826	1676	177	797	1592	249
Grp Volume(v), veh/h	87	0	306	37	0	117	342	0	638	56	0	599
Grp Sat Flow(s),veh/h/ln	1275	0	1673	1082	0	1807	826	0	1853	797	0	1840
Q Serve(g_s), s	5.2	0.0	14.9	2.9	0.0	4.6	36.0	0.0	19.1	4.2	0.0	17.6
Cycle Q Clear(g_c), s	9.8	0.0	14.9	17.8	0.0	4.6	53.6	0.0	19.1	23.3	0.0	17.6
Prop In Lane	1.00		0.66	1.00		0.24	1.00		0.10	1.00		0.14
Lane Grp Cap(c), veh/h	346	0	435	182	0	470	411	0	1104	385	0	1096
V/C Ratio(X)	0.25	0.00	0.70	0.20	0.00	0.25	0.83	0.00	0.58	0.15	0.00	0.55
Avail Cap(c_a), veh/h	346	0	435	182	0	470	411	0	1104	385	0	1096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.2	0.0	30.2	38.2	0.0	26.3	27.6	0.0	11.2	18.4	0.0	10.9
Incr Delay (d2), s/veh	1.7	0.0	9.2	2.5	0.0	1.3	17.7	0.0	2.2	0.8	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	6.7	0.9	0.0	2.0	8.7	0.0	7.0	0.8	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.0	0.0	39.4	40.7	0.0	27.6	45.2	0.0	13.4	19.2	0.0	12.9
LnGrp LOS	C	A	D	D	A	C	D	A	B	B	A	B
Approach Vol, veh/h		393			154			980			655	
Approach Delay, s/veh		37.7			30.8			24.5			13.4	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	60.0	30.0	60.0	30.0
Change Period (Y+Rc), s	* 6.4	* 6.6	* 6.4	* 6.6
Max Green Setting (Gmax), s	* 54	* 23	* 54	* 23
Max Q Clear Time (g_c+I1), s	55.6	16.9	25.3	19.8
Green Ext Time (p_c), s	0.0	1.1	4.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	24.0
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	31	112	17	27	8	77	333	40	12	306	33
Future Volume (veh/h)	47	31	112	17	27	8	77	333	40	12	306	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	54	36	129	22	35	10	96	416	50	16	397	43
Peak Hour Factor	0.87	0.87	0.87	0.77	0.77	0.77	0.80	0.80	0.80	0.77	0.77	0.77
Percent Heavy Veh, %	0	0	0	1	1	1	0	0	0	0	0	0
Cap, veh/h	569	124	445	451	482	138	464	846	102	444	856	93
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1383	363	1302	1230	1410	403	964	1664	200	941	1685	182
Grp Volume(v), veh/h	54	0	165	22	0	45	96	0	466	16	0	440
Grp Sat Flow(s),veh/h/ln	1383	0	1666	1230	0	1813	964	0	1864	941	0	1867
Q Serve(g_s), s	1.6	0.0	4.3	0.8	0.0	1.0	4.3	0.0	9.8	0.7	0.0	9.1
Cycle Q Clear(g_c), s	2.7	0.0	4.3	5.1	0.0	1.0	13.4	0.0	9.8	10.5	0.0	9.1
Prop In Lane	1.00		0.78	1.00		0.22	1.00		0.11	1.00		0.10
Lane Grp Cap(c), veh/h	569	0	569	451	0	619	464	0	948	444	0	949
V/C Ratio(X)	0.09	0.00	0.29	0.05	0.00	0.07	0.21	0.00	0.49	0.04	0.00	0.46
Avail Cap(c_a), veh/h	569	0	569	451	0	619	464	0	948	444	0	949
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.2	0.0	14.4	16.3	0.0	13.3	13.8	0.0	9.7	13.1	0.0	9.5
Incr Delay (d2), s/veh	0.3	0.0	1.3	0.2	0.0	0.2	1.0	0.0	1.8	0.2	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.6	0.2	0.0	0.4	0.9	0.0	3.3	0.1	0.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	15.7	16.5	0.0	13.6	14.8	0.0	11.5	13.3	0.0	11.1
LnGrp LOS	B	A	B	B	A	B	B	A	B	B	A	B
Approach Vol, veh/h		219			67			562			456	
Approach Delay, s/veh		15.4			14.5			12.1			11.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	35.0	25.0	35.0	25.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	30.5	20.5	30.5	20.5
Max Q Clear Time (g_c+I1), s	15.4	6.3	12.5	7.1
Green Ext Time (p_c), s	2.8	0.8	2.4	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

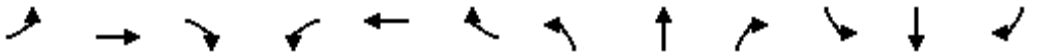
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	146	111	844	266	118	590
Future Volume (veh/h)	146	111	844	266	118	590
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	174	132	927	292	130	648
Peak Hour Factor	0.84	0.84	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1
Cap, veh/h	391	348	1035	877	411	1244
Arrive On Green	0.22	0.22	1.00	1.00	0.05	0.66
Sat Flow, veh/h	1795	1598	1885	1598	1795	1885
Grp Volume(v), veh/h	174	132	927	292	130	648
Grp Sat Flow(s),veh/h/ln	1795	1598	1885	1598	1795	1885
Q Serve(g_s), s	7.6	6.3	0.0	0.0	0.0	16.0
Cycle Q Clear(g_c), s	7.6	6.3	0.0	0.0	0.0	16.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	391	348	1035	877	411	1244
V/C Ratio(X)	0.45	0.38	0.90	0.33	0.32	0.52
Avail Cap(c_a), veh/h	391	348	1035	877	411	1244
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	30.0	0.0	0.0	11.3	7.9
Incr Delay (d2), s/veh	3.6	3.1	11.9	1.0	2.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	6.2	3.4	0.2	1.5	5.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.1	33.1	11.9	1.0	13.3	9.5
LnGrp LOS	C	C	B	A	B	A
Approach Vol, veh/h	306		1219			778
Approach Delay, s/veh	33.7		9.3			10.1
Approach LOS	C		A			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		65.0		25.0	10.0	55.0
Change Period (Y+Rc), s		* 5.6		* 5.4	* 5.6	* 5.6
Max Green Setting (Gmax), s		* 59		* 20	* 4.4	* 49
Max Q Clear Time (g_c+I1), s		18.0		9.6	2.0	2.0
Green Ext Time (p_c), s		4.7		0.6	0.0	10.1

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

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	112	129	235	72	82	135	429	392	129	316	38
Future Volume (veh/h)	77	112	129	235	72	82	135	429	392	129	316	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	92	133	154	261	80	91	148	471	431	184	451	54
Peak Hour Factor	0.84	0.84	0.84	0.90	0.90	0.90	0.91	0.91	0.91	0.70	0.70	0.70
Percent Heavy Veh, %	0	0	0	0	0	0	1	1	1	0	0	0
Cap, veh/h	415	392	332	453	209	237	315	660	746	302	585	70
Arrive On Green	0.07	0.21	0.21	0.12	0.26	0.26	0.08	0.35	0.35	0.08	0.35	0.35
Sat Flow, veh/h	1810	1900	1610	1810	811	923	1795	1885	1598	1810	1665	199
Grp Volume(v), veh/h	92	133	154	261	0	171	148	471	431	184	0	505
Grp Sat Flow(s),veh/h/ln	1810	1900	1610	1810	0	1734	1795	1885	1598	1810	0	1864
Q Serve(g_s), s	3.5	5.4	7.6	10.1	0.0	7.3	4.7	19.5	17.8	5.9	0.0	21.7
Cycle Q Clear(g_c), s	3.5	5.4	7.6	10.1	0.0	7.3	4.7	19.5	17.8	5.9	0.0	21.7
Prop In Lane	1.00		1.00	1.00		0.53	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	415	392	332	453	0	446	315	660	746	302	0	655
V/C Ratio(X)	0.22	0.34	0.46	0.58	0.00	0.38	0.47	0.71	0.58	0.61	0.00	0.77
Avail Cap(c_a), veh/h	415	392	332	453	0	446	315	660	746	302	0	655
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	30.6	31.4	23.6	0.0	27.6	19.3	25.4	17.6	19.5	0.0	26.0
Incr Delay (d2), s/veh	1.2	2.3	4.6	5.3	0.0	2.5	5.0	6.5	3.3	8.8	0.0	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.6	3.2	4.6	0.0	3.2	2.2	9.2	6.5	3.1	0.0	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	32.9	36.0	28.9	0.0	30.1	24.3	31.8	20.8	28.3	0.0	34.6
LnGrp LOS	C	C	D	C	A	C	C	C	C	C	A	C
Approach Vol, veh/h		379			432			1050			689	
Approach Delay, s/veh		32.6			29.4			26.2			32.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	37.3	11.4	29.2	12.4	37.2	16.0	24.6
Change Period (Y+Rc), s	5.5	* 5.6	5.5	* 6	5.5	* 5.6	5.5	* 6
Max Green Setting (Gmax), s	6.8	* 32	5.9	* 23	6.9	* 32	10.5	* 19
Max Q Clear Time (g_c+I1), s	6.7	23.7	5.5	9.3	7.9	21.5	12.1	9.6
Green Ext Time (p_c), s	0.0	2.0	0.0	0.7	0.0	3.1	0.0	0.7

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

Notes

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

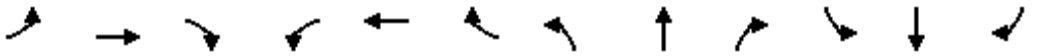
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	0	103	0	1	2	179	1071	2	1	714	79
Future Volume (veh/h)	88	0	103	0	1	2	179	1071	2	1	714	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1900	1900	1900	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	100	0	117	0	2	3	203	1217	2	1	752	83
Peak Hour Factor	0.88	0.88	0.88	0.60	0.60	0.60	0.88	0.88	0.88	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	1	1	1
Cap, veh/h	218	0	159	0	69	103	587	1437	2	233	1440	1221
Arrive On Green	0.10	0.00	0.10	0.00	0.10	0.10	0.76	0.76	0.76	1.00	1.00	1.00
Sat Flow, veh/h	1374	0	1585	0	686	1029	663	1882	3	461	1885	1598
Grp Volume(v), veh/h	100	0	117	0	0	5	203	0	1219	1	752	83
Grp Sat Flow(s),veh/h/ln	1374	0	1585	0	0	1715	663	0	1885	461	1885	1598
Q Serve(g_s), s	6.2	0.0	6.5	0.0	0.0	0.2	9.4	0.0	38.9	0.1	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.0	6.5	0.0	0.0	0.2	9.4	0.0	38.9	39.0	0.0	0.0
Prop In Lane	1.00		1.00	0.00		0.60	1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	0	159	0	0	172	587	0	1440	233	1440	1221
V/C Ratio(X)	0.46	0.00	0.73	0.00	0.00	0.03	0.35	0.00	0.85	0.00	0.52	0.07
Avail Cap(c_a), veh/h	376	0	336	0	0	364	587	0	1440	233	1440	1221
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	39.3	0.0	0.0	36.5	3.6	0.0	7.1	11.0	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	6.4	0.0	0.0	0.1	1.6	0.0	6.3	0.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	2.8	0.0	0.0	0.1	1.1	0.0	12.2	0.0	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	0.0	45.7	0.0	0.0	36.6	5.2	0.0	13.4	11.1	1.4	0.1
LnGrp LOS	D	A	D	A	A	D	A	A	B	B	A	A
Approach Vol, veh/h		217			5			1422			836	
Approach Delay, s/veh		43.5			36.6			12.3			1.2	
Approach LOS		D			D			B			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	75.1	14.9	75.1	14.9
Change Period (Y+Rc), s	6.3	* 5.9	6.3	* 5.9
Max Green Setting (Gmax), s	58.7	* 19	58.7	* 19
Max Q Clear Time (g_c+I1), s	40.9	8.5	41.0	2.2
Green Ext Time (p_c), s	11.7	0.6	5.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	11.3
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	713	1429	166	96	889	164	137	224	112	160	125	425
Future Volume (veh/h)	713	1429	166	96	889	164	137	224	112	160	125	425
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1900	1900	1900	1870	1870	1870
Adj Flow Rate, veh/h	751	1504	175	102	946	174	144	236	118	168	132	447
Peak Hour Factor	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	2	2	2	0	0	0	2	2	2
Cap, veh/h	850	1734	774	192	1051	469	260	372	315	229	366	697
Arrive On Green	0.24	0.48	0.48	0.06	0.30	0.30	0.05	0.20	0.20	0.05	0.20	0.20
Sat Flow, veh/h	3483	3582	1598	1781	3554	1585	1810	1900	1610	1781	1870	1585
Grp Volume(v), veh/h	751	1504	175	102	946	174	144	236	118	168	132	447
Grp Sat Flow(s),veh/h/ln	1742	1791	1598	1781	1777	1585	1810	1900	1610	1781	1870	1585
Q Serve(g_s), s	24.9	44.8	7.6	4.7	30.7	10.4	5.7	13.7	7.6	5.7	7.3	23.5
Cycle Q Clear(g_c), s	24.9	44.8	7.6	4.7	30.7	10.4	5.7	13.7	7.6	5.7	7.3	23.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	850	1734	774	192	1051	469	260	372	315	229	366	697
V/C Ratio(X)	0.88	0.87	0.23	0.53	0.90	0.37	0.55	0.63	0.37	0.73	0.36	0.64
Avail Cap(c_a), veh/h	850	1734	774	192	1051	469	260	372	315	229	366	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	27.5	17.9	29.9	40.5	33.4	39.7	44.3	41.9	44.3	41.7	26.2
Incr Delay (d2), s/veh	12.8	6.1	0.7	10.1	12.1	2.2	8.2	8.0	3.4	18.8	2.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	18.9	2.8	2.5	14.4	4.1	1.5	7.0	3.2	3.3	3.6	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	33.7	18.6	40.0	52.7	35.7	48.0	52.3	45.2	63.1	44.5	30.7
LnGrp LOS	E	C	B	D	D	D	D	D	D	E	D	C
Approach Vol, veh/h		2430			1222			498			747	
Approach Delay, s/veh		39.7			49.2			49.4			40.4	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	31.0	12.2	65.6	11.2	31.0	34.8	43.0
Change Period (Y+Rc), s	5.5	7.5	5.5	7.5	5.5	7.5	5.5	7.5
Max Green Setting (Gmax), s	5.7	23.5	6.7	58.1	5.7	23.5	29.3	35.5
Max Q Clear Time (g_c+I1), s	7.7	15.7	6.7	46.8	7.7	25.5	26.9	32.7
Green Ext Time (p_c), s	0.0	0.9	0.0	7.4	0.0	0.0	0.8	1.7

Intersection Summary	
HCM 6th Ctrl Delay	43.1
HCM 6th LOS	D

Notes

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