

MEAD JOHNSON

Reckitt Zeeland Traffic Impact Study

CITY OF ZEELAND

OTTAWA COUNTY, MICHIGAN

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1471

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1. Introduction

1.1. Background

Mead Johnson is proposing an expansion of their facility at 725 E Main Avenue in the City of Zeeland, Ottawa County, Michigan. The Developer is planning to complete the project by 2028. The existing 26.0-acre site is currently zoned Industrial (I-2) and has two existing access points along E Main Avenue and one along N Fairview Road.

The proposed development will be accessed by two proposed street connections on the east side of N Carlton Street and one on the north side of E Main Street. The existing street connection on the west side of N Fairview Road will remain.

The City of Zeeland has requested that a traffic impact study be performed as part of the proposed development to determine any effects the proposed development may have on the surrounding road network.

1.2. Study Area

Figure 1 shows a map of the development and surrounding area, including the surrounding area and intersections to be studied. The eight (8) following intersections were analyzed as part of the study area:

- E Main Avenue and N Carlton Street
- E Main Avenue and West Driveway
- E Main Avenue and East Driveway
- E Main Avenue and N Fairview Road
- E Main Avenue and M-121/Chicago Drive
- N Fairview Road and Driveway
- E Washington Avenue and N Carlton Street
- E Washington Avenue and N Fairview Road

Figure 2 shows the concept layout of the development.

1.3. Existing Roadways

E Main Ave is a 2-lane east-west local road with a center turn lane east of Sanford Street and a 2-lane east-west road with on-street parking west of Sanford Street. According to MDOT, the 2022 (most recent available) Average Annual Daily Traffic (AADT) of E Main Avenue is 8,282 vehicles per day between M-121/Chicago Drive and N Fairview Road. The speed limit along E Main Avenue is 40 mph east of N Carlton Drive and 25 mph west of N Carlton Drive.

N Carlton Street is 2-lane north-south local road. According to MDOT, the 2021 (most recent available) Average Annual Daily Traffic (AADT) volume was 599 vehicles per day between E

Washington Avenue and E Main Avenue. The speed limit on N Carlton Street is 25 mph within the study area.

West Driveway is a 2-lane north-south industrial entrance with dedicated left and right exit lanes off the north side of E Main Avenue. No ADT or speed limit information is available, but speeds and volumes appear to both be low.

East Driveway is a 2-lane north-south industrial entrance with dedicated left and right exit lanes off the north side of E Main Avenue. No ADT or speed limit information is available, but speeds and volumes appear to both be low.

N Fairview Road is 4-lane north-south local road. According to MDOT, the 2024 (most recent available) Average Annual Daily Traffic (AADT) volume was 10,217 vehicles per day between E Washington Avenue and E Main Avenue. The speed limit on N Fairview Road is 45 mph within the study area.

E Washington Avenue is 2-lane east-west local road with a center turn lane. According to MDOT, the 2024 (most recent available) Average Annual Daily Traffic (AADT) volume was 7,740 vehicles per day between N Carlton Street and N Fairview Road. The speed limit on E Washington Avenue is 50 mph within the study area.

M-121/Chicago Drive is divided 4-lane northeast-southwest state route. According to MDOT, the 2024 (most recent available) Average Annual Daily Traffic (AADT) volume was 21,012 vehicles per day northeast of E Main Avenue. The speed limit on M-121/Chicago Drive is 55 mph within the study area.

1.4. Existing Intersections

The study area contains a total of two (2) existing signalized intersections, one (1) four-way stop intersection, four (4) unsignalized T-intersections, and one (1) two-way stop controlled intersection. E Washington Avenue at N Fairview Road and E Main Avenue at M-121/Chicago Drive are signalized. E Main Avenue at N Fairview Road is a four way stop and E Main Avenue at East Driveway is two-way stop controlled. The intersections are shown in Figure 3 and cycle lengths are provided in Table 1.

Table 1: Existing Intersections Details

Intersection	Type of Traffic Control	Cycle Length (sec)	
		Weekday AM Peak	Weekday PM Peak
Signalized Intersections			
E Washington Avenue & N Fairview Road	Signal (2-phase)	60	60
E Main Avenue & M-121/Chicago Drive	Signal (2-phase)	120	120
Unsignalized Intersections			
E Main Avenue & N Fairview Road	4-way Stop Int.	-	-
E Main Avenue & N Carlton Street	1-way Stop T Int.	-	-
E Main Avenue & West Driveway	1-way Stop T Int.	-	-
E Washington Avenue & N Carlton Street	1-way Stop T Int.	-	-
N Fairview Road & Driveway	1-way Stop T Int.	-	-
E Main Avenue & East Driveway	2-way Stop Controlled	-	-

1.5. Site Access

The access for the proposed development is via four driveways, one existing driveway along Fairview Road, one proposed driveway along E Main Avenue, and two proposed driveways along N Carlton Street. The access points on N Carlton Street are approximately 215 feet and 660 feet north of E Main Avenue. The access point on E Main Avenue is approximately 1,320 feet east of N Carlton Street.

2. Existing (2025) Conditions

VK Civil obtained new turning movement counts at the study area intersections. Counts were collected on Tuesday, September 9, 2025 from 5:00 to 9:00 AM and 4:00 to 7:00 PM. The existing peak-hour volumes are depicted in Figure 4 and count reports are included in the Technical Appendix.

2.1. Existing (2025) Capacity Analysis

The existing levels-of-service (LOS) were determined using the industry-standard method presented in the Highway Capacity Manual (6th Edition), published by the Transportation Research Board (TRB). *Synchro*[®] was used to perform the LOS analysis.

The level-of-service of a roadway gives a measure of how well or poorly traffic movements operate under predetermined traffic characteristics like traffic demands, lane configurations, and traffic controls. The different levels of service are determined by the average amount of control delay per vehicle. Control delay is the delay associated with stopping for a traffic light, stop sign, or opposing traffic and is comprised of four “times”: deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

As seen in Table 2, LOS A is indicative of minimal control delay while LOS F is indicative of failure of an intersection and results in long vehicle queues and delays. Typically, LOS D or better is considered adequate intersection performance, and lower levels may be acceptable for short time periods or around peak hours of the day when high traffic volumes normally occur.

Table 2: Intersection Level of Service Criteria

Level-of-Service	Control Delay per Vehicle (sec)	
	Signalized Intersections	Unsignalized Intersections
A	< 10	< 10
B	10 - 20	10 - 15
C	20 - 35	15 - 25
D	35 - 55	25 - 35
E	55 - 80	35 - 50
F	>80	>50

Table 3 shows the existing conditions at the study-area intersections for the two peak-hour analysis periods. The results of the *Synchro*[®] capacity analysis reports can be found in the Technical Appendix.

Table 3: Existing (2025) Peak-Hour LOS Data

Intersection		Weekday AM Peak-Hour		Weekday PM Peak-Hour	
		Level of Service	Delay (sec/veh)	Level of Service	Delay (sec/veh)
Signalized Intersections – Overall					
E Washington Avenue & N Fairview Road		B	16.4	C	20.3
E Main Avenue & M-121/Chicago Drive		B	19.9	B	18.6
Unsignalized Intersections					
E Main Avenue & N Fairview Road	NB-L	B	13.4	C	15.2
	NB	D	30.1	C	20.4
	SB-L	D	25.4	E	39.8
	SB	B	14.6	C	18.3
	EB-L	B	14.4	B	14.5
	EB	C	24.5	E	49.0
	WB-L	B	13.0	B	14.0
	WB-T	C	20.2	C	18.4
	WB-R	E	36.5	C	24.6
	Int. Tot.	D	26.4	D	29.9
E Main Avenue & N Carlton Street	SB	C	15.3	B	14.3
	EB-L	A	8.1	A	7.9
E Main Avenue & West Driveway	SB-L	B	11.9	B	12.4
	SB-R	A	9.5	A	9.3
	EB-L	A	7.9	A	7.7
E Washington Avenue & N Carlton Street	NB	C	18.7	C	15.4
	WB-L	A	7.9	A	8.3
N Fairview Road & Driveway	EB-L	C	20.1	C	19.8
	EB-R	A	9.6	A	9.9
	NB-L	A	8.5	A	8.8
E Main Avenue & East Driveway	NB	B	12.3	B	12.8
	SB-L	B	13.6	B	14.9
	SB-R	-	-	A	9.6
	EB-L	-	-	A	7.7
	WB-L	A	9.0	A	8.1

A more detailed breakdown of the volumes and LOS values for each movement at the intersections within the study area can be seen in Figure 4. All movements and intersections operate at a passing level of service (LOS D or better) in the AM and PM peak hour except for the westbound right at E Main Avenue to northbound N Fairview Road in the AM and the southbound left and eastbound through/right at E Main Avenue and N Fairview Road in the PM.

2.2. Existing (2025) Traffic Crash Analysis.

Table 4: E Washington Avenue and N Fairview Road Intersection Crash Type Summary

Description	Total Crashes	Percentages
Angle	8	42.1%
Rear-end	6	31.5%
Sideswipe Same Direction	1	5.3%
Single Motor Vehicle	1	5.3%
Head-On Left Turn	2	10.5%
Other	1	5.3%
Total	19	100%

A review of traffic crashes at E Washington Avenue and N Fairview Road intersection show there is not an overwhelming number of crashes for the review period of 2020-2024. The high number of angle and rear-end crashes is typical for signalized intersections along N Fairview Road and E Washington Avenue. The crashes typically result in no to minimal injury and the worst-case crashes were two class A crashes reported at this intersection in the last five years, both class A crashes were angle crashes with vehicles going southbound hitting eastbound and westbound vehicles during the night with flashing yellows for eastbound and westbound vehicles. There does not appear to be a consistent pattern of crashes that could be solved by engineering design.

Table 5: E Main Avenue and M-121/Chicago Drive Intersection Crash Type Summary

Description	Total Crashes	Percentages
Angle	1	5.0%
Rear-end	3	15.0%
Sideswipe Same Direction	8	40.0%
Single Motor Vehicle	5	25.0%
Rear-end Right Turn	2	10.0%
Other	1	5.0%
Total	20	100%

A review of traffic crashes at E Main Avenue and M-121/Chicago Drive intersection show there is not an overwhelming number crashes for the review period of 2020-2024. The crashes typically resulted in no to minimal injury and the worst-case crash was a class B crash, which was a single vehicle crash with an intoxicated driver. There does not appear to be a consistent pattern of crashes that could be solved by engineering design.

Table 6: E Main Avenue and N Fairview Road Intersection Crash Type Summary

Description	Total Crashes	Percentages
Angle	6	50.0%
Rear-end	2	16.7%
Sideswipe Same Direction	3	25.0%
Other	1	8.3%
Total	12	100%

A review of traffic crashes at E Main Avenue and N Fairview Road intersection show there is not an overwhelming number of crashes for the review period of 2020-2024. The high number of angle crashes is typical for four-way stop intersection. The crashes all result in no to minimal injury in the last five years. There does not appear to be a consistent pattern of crashes that could be solved by engineering design.

Table 7: E Main Avenue and N Carlton Street Intersection Crash Type Summary

Description	Total Crashes	Percentages
Head-On Left Turn	1	50%
Rear End	1	50%
Total	2	100%

A review of traffic crashes at E Main Avenue and N Carlton Street intersection show there is a minimal number of crashes for the review period of 2020-2024. The crashes reported at this intersection were a no to minimal injury and a class C crash. There does not appear to be a consistent pattern of crashes that could be solved by engineering design.

No crashes were reported at the West Driveway and E Main Avenue, East Driveway and E Main Avenue, or the Driveway and N Fairview Road intersections in the last five years.

Table 8: E Washinton Avenue and N Carlton Street Intersection Crash Type Summary

Description	Total Crashes	Percentages
Angle	1	50%
Sideswipe – Same Direction	1	50%
Total	2	100%

A review of traffic crashes at E Washington Avenue and N Carlton Street intersection show there is a minimal number of crashes for the review period of 2020-2024. The crashes reported at this intersection were no to minimal injury. There does not appear to be a consistent pattern of crashes that could be solved by engineering design.

3. Base Year (2027) Conditions

This section outlines an analysis of the base year (2027) peak traffic conditions. These conditions are meant to be representative of the traffic conditions in the projected year of construction of the proposed development but do not include the traffic generated by it. These conditions serve as a baseline against which any impacts of construction can be measured.

Base year (2027) traffic volumes were estimated with a 1% growth rate per year over the Existing (2025) volumes.

3.1. Base Year (2027) Capacity Analysis

The Base year (2027) overall intersection LOS for both the signalized and unsignalized intersections can be seen in Table 9. Capacity reports from the Synchro® software for all intersections are included in the Technical Appendix. Figure 5 shows the LOS of all movements at the intersections within the study area.

Table 9: Base Year (2027) Peak-Hour LOS Data

Intersection		Weekday AM Peak-Hour		Weekday PM Peak-Hour	
		Level of Service	Delay (sec/veh)	Level of Service	Delay (sec/veh)
Signalized Intersections – Overall					
E Washington Avenue & N Fairview Road		B	16.6	C	21.4
E Main Avenue & M-121/Chicago Drive		C	20.1	B	18.8
Unsignalized Intersections					
E Main Avenue & N Fairview Road	NB-L	B	13.6	C	15.7
	NB	D	32.6	C	21.5
	SB-L	D	26.8	E	44.7
	SB	B	15.0	C	19.3
	EB-L	B	14.7	B	14.8
	EB	D	25.9	F	57.4
	WB-L	B	13.2	B	14.4
	WB-T	C	21.2	C	19.3
	WB-R	E	40.5	D	27.0
	Int. Tot.	D	28.4	D	33.4
E Main Avenue & N Carlton Street	SB	C	15.6	B	14.6
	EB-L	A	8.2	A	7.9
E Main Avenue & West Driveway	SB-L	B	12.0	B	12.5
	SB-R	A	9.6	A	9.3
	EB-L	A	7.9	A	7.7
E Washington Avenue & N Carlton Street	NB	C	19.3	C	15.7
	WB-L	A	8.1	A	8.3
N Fairview Road & Driveway	EB-L	C	20.5	C	16.3
	EB-R	A	9.6	A	9.9
	NB-L	A	8.5	A	8.3
E Main Avenue & East Driveway	NB	B	12.4	B	12.9
	SB-L	B	13.7	C	15.1
	SB-R	-	-	A	9.7
	EB-L	-	-	A	7.8
	WB-L	A	9.0	A	8.1

Similar to the Existing (2025) analysis, all movements and intersections operate at a passing level of service (LOS D or better) in the AM and PM peak except for the previously failing movements at E Main Avenue and N Fairview Road in the AM and PM. The eastbound through/right in the AM and PM and the westbound right in the PM at E Main Avenue and N Fairview Road dropped down one level of service from the Existing (2025) analysis to the Base (2027) analysis. The southbound left at E Main Avenue and East Driveway dropped down one level of service from the Existing (2025) analysis to the Base (2027) analysis. The E Main Avenue and M-121/Chicago Drive intersection dropped down one level of service from the Existing (2025) analysis to the base (2027) analysis in the AM but is still at a passing level of service.

4. Base Year (2027) Pre-AM Peak Hour Conditions

This section outlines an analysis of the base year (2027) peak traffic conditions for the pre-AM peak hour (6AM to 7 AM). All contractor vehicles will be arriving to the site prior to the 7 AM Toolbelt Meeting. These conditions are meant to be representative of the traffic conditions in the projected year of construction of the proposed development but do not include the traffic generated by it. These conditions serve as a baseline against which any impacts of construction can be measured.

Base year (2027) traffic volumes were estimated with a 1% growth rate per year over the Existing (2025) volumes.

4.1. Base Year (2027) Pre-AM Peak Hour Capacity Analysis

The Base year (2027) overall intersection LOS for both the signalized and unsignalized intersections can be seen in Table 10. Capacity reports from the Synchro® software for all intersections are included in the Technical Appendix. Figure 6 shows the LOS of all movements at the intersections within the study area.

Table 10: Base Year (2027) Pre-AM Peak Hour LOS Data

Intersection		Weekday AM Pre-AM Peak-Hour	
		Level of Service	Delay (sec/veh)
E Washington Avenue & N Fairview Road		B	15.2
E Main Avenue & M-121/Chicago Drive		B	19.4
E Main Avenue & N Fairview Road	NB-L	B	12.2
	NB	C	17.8
	SB-L	C	21.0
	SB	B	12.7
	EB-L	B	14.0
	EB	C	17.2
	WB-L	B	11.1
	WB-T	B	13.5
	WB-R	C	21.0
	Int. Tot.	C	18.0
E Main Avenue & N Carlton Street	SB	B	10.2
	EB-L	A	7.5
E Main Avenue & West Driveway	SB-L	B	11.1
	SB-R	A	9.3
	EB-L	A	7.7
E Washington Avenue & N Carlton Street	NB	B	11.3
	WB-L	A	7.7
N Fairview Road & Driveway	EB-L	C	15.0
	EB-R	A	9.4
	NB-L	A	7.9
E Main Avenue & East Driveway	NB	B	11.5
	SB-L	B	12.5
	SB-R	-	-
	EB-L	-	-
	WB-L	A	7.7

All movements and intersections operate at a passing level of service (LOS D or better) in the AM.

5. Average Construction (2027) Conditions

This section outlines an analysis of the Average Construction year (2027) peak traffic conditions for the pre-AM peak hour (6AM to 7 AM). All contractor vehicles will be arriving to the site prior to the 7 AM Toolbelt Meeting. The average daily construction traffic is 200 vehicles. These are the traffic conditions in the Average Construction year of the proposed development but do not include the traffic generated by the proposed development.

Traffic Distribution for Construction

- 80% entering from the east on Main Street, east of Fairview Road
- 5% entering from the south on Fairview Road, south of Main Street
- 5% entering from the east on E Washington Avenue, east of Fairview Road
- 5% entering from the north on Fairview Road, north of E Washington Avenue
- 5% entering from the west on E Washington Avenue, west of N Carlton Street

These 200 construction vehicles are the maximum amount of vehicles that can use this distribution before the westbound through lane at Main Street and Fairview Road becomes a failing level of service.

Average Construction year (2027) traffic volumes were estimated with a 1% growth rate per year over the Existing (2025) volumes.

5.1. Average Construction (2027) Capacity Analysis

The average construction year (2027) overall intersection LOS for both the signalized and unsignalized intersections can be seen in Table 11. Capacity reports from the Synchro® software for all intersections are included in the Technical Appendix. Figure 7 shows the LOS of all movements at the intersections within the study area.

Table 11: Average Construction Year (2027) Pre-AM Peak-Hour LOS Data

Intersection		Weekday AM Pre-AM Peak-Hour	
		Level of Service	Delay (sec/veh)
E Washington Avenue & N Fairview Road		B	15.3
E Main Avenue & M-121/Chicago Drive		C	22.5
E Main Avenue & N Fairview Road	NB-L	B	13.7
	NB	C	21.3
	SB-L	D	25.4
	SB	B	14.2
	EB-L	C	15.4
	EB	C	20.2
	WB-L	B	11.9
	WB-T	D	35.0
	WB-R	C	24.7
	Int. Tot.	C	24.5
E Main Avenue & N Carlton Street	SB	B	10.7
	EB-L	A	7.8
E Washington Avenue & N Carlton Street	NB	B	12.0
	WB-L	A	7.8

Similar to the Base (2027) analysis, all movements and intersections operate at a passing level of service (LOS D or better) in the Pre-AM Peak Hour.

6. Peak Construction (2027) Conditions

This section outlines an analysis of the Peak Construction year (2027) peak traffic conditions for the pre-AM peak hour (6AM to 7 AM). All contractor vehicles will be arriving to the site prior to the 7 AM Toolbelt Meeting. The peak daily construction traffic is estimated to be 456 vehicles as stated by Mead Johnson. These are the traffic conditions in the Peak Construction of opening of the proposed development but do not include the traffic generated by the proposed development.

Due to the large influx of contractor vehicles, we have specified a route that contractors are to take arrive on site which is shown in the appendix. This route leads the contractors north 84th Street, east on Chicago Drive, west on E Washington Avenue, then south on N Carlton Street. Along the route, it is assumed that 150 vehicles turn into the future contractor parking lot at the current site of High Point Finishing. Vehicles parking here allow the northbound vehicles on N Carlton Street to remain at a passing level of service (LOS D). The peak of around 450 vehicles is expected to occur for three weeks during the late summer and early fall of 2027.

Traffic Distribution for Construction

- 80% entering from the east on I-196 routing to E Washington Avenue
- 5% entering from the south on Fairview Road, south of Main Street
- 5% entering from the east on E Washington Avenue, east of Fairview Road (total of 85% with 80% from I-196 traffic)
- 5% entering from the north on Fairview Road, north of E Washington Avenue
- 5% entering from the west on E Washington Avenue, west of N Carlton Street

See appendix for this detour route with the distribution above for when construction vehicles are over 200.

6.1. Northbound Carlton Analysis

When the number of contractors ranges between 201 and 359 vehicles, and assuming that roughly 40% of vehicles traveling on E. Washington Avenue turn into the High Point contractor parking lot, the northbound approach on N Carlton Street is expected to operate at LOS C. When the number of contractors accessing the site in the morning ranges between 360 and 456 vehicles, and assuming the same 40% of vehicles traveling on E. Washington Avenue turn into the High Point contractor parking lot, the northbound approach on N Carlton Street is expected to operate at LOS D. Based on projected construction activity, the northbound lane on N Carlton Street is expected to operate at LOS D for approximately 15 months beginning in the spring of 2027.

6.2. Peak Construction (2027) Capacity Analysis

Peak Construction year (2027) traffic volumes were estimated with a 1% growth rate per year over the Existing (2025) volumes.

The peak construction year (2027) overall intersection LOS for both the signalized and unsignalized intersections can be seen in Table 12. Capacity reports from the Synchro® software for all intersections are included in the Technical Appendix. Figure 8 shows the LOS of all movements at the intersections within the study area.

Table 12: Peak Construction Year (2027) Pre-AM Peak-Hour LOS Data

Intersection		Weekday AM Pre-AM Peak-Hour	
		Level of Service	Delay (sec/veh)
E Washington Avenue & N Fairview Road		B	19.1
E Main Avenue & N Fairview Road	NB-L	B	13.3
	NB	C	18.3
	SB-L	C	22.0
	SB	B	13.0
	EB-L	B	14.3
	EB	C	17.9
	WB-L	B	11.6
	WB-T	B	13.9
	WB-R	C	23.4
	Int. Tot.	C	18.7
E Main Avenue & N Carlton Street	SB	B	10.2
	EB-L	A	7.5
E Washington Avenue & N Carlton Street	NB	D	34.1
	WB-L	A	8.8

Similar to the Base (2027) analysis, all movements and intersections operate at a passing level of service (LOS D or better) in the AM.

7. Base Year (2028) Conditions

This section outlines an analysis of the base year (2028) peak traffic. These conditions are meant to be representative of the traffic conditions in the projected year of opening of the proposed development but do not include the traffic generated by it. These conditions serve as a baseline against which any impacts of the development can be measured.

Base year (2028) traffic volumes were estimated with a 1% growth rate per year over the Existing (2025) volumes.

7.1. Base Year (2028) Capacity Analysis

The Base year (2028) overall intersection LOS for both the signalized and unsignalized intersections can be seen in Table 12. Figure 8 shows the LOS of all movements at the intersections within the study area.

Table 13: Base Year (2028) Peak-Hour LOS

Intersection		Weekday AM Peak-Hour		Weekday PM Peak-Hour	
		Level of Service	Delay (sec/veh)	Level of Service	Delay (sec/veh)
Signalized Intersections – Overall					
E Washington Avenue & N Fairview Road		B	16.8	C	21.7
E Main Avenue & M-121/Chicago Drive		C	20.2	B	19.0
Unsignalized Intersections					
E Main Avenue & N Fairview Road	NB-L	B	13.7	C	15.8
	NB	D	33.6	C	22.1
	SB-L	D	27.5	E	47.1
	SB	C	15.2	C	19.7
	EB-L	B	14.8	B	14.9
	EB	D	26.6	F	60.8
	WB-L	B	13.3	B	14.5
	WB-T	C	21.7	C	19.7
	WB-R	E	43.0	D	27.9
	Int. Tot.	D	29.5	D	35.0
E Main Avenue & N Carlton Street	SB	C	15.8	B	14.7
	EB-L	A	8.2	A	7.9
E Main Avenue & West Driveway	SB-L	B	12.0	B	12.5
	SB-R	A	9.6	A	9.3
	EB-L	A	7.9	A	7.8
E Washington Avenue & N Carlton Street	NB	C	19.6	C	15.8
	WB-L	A	8.2	A	8.3
N Fairview Road & Driveway	EB-L	C	20.7	C	16.4
	EB-R	A	9.6	B	10.0
	NB-L	A	8.5	A	8.3
E Main Avenue & East Driveway	NB	B	12.4	B	13.0
	SB-L	B	13.8	C	15.3
	SB-R	-	-	A	9.7
	EB-L	-	-	A	7.8
	WB-L	A	9.1	A	8.1

Similar to the Base (2027) analysis, all movements and intersections operate at a passing level of service (LOS D or better) in the AM and PM peak except for the previously failing movements at E Main Avenue and N Fairview Road in the AM and PM. The southbound through/right in the AM at E Main Avenue and N Fairview Road dropped down one level of service from the Base

(2027) analysis to the Base (2028) analysis. The southbound left/right in the PM at E Main Avenue and N Carlton Street dropped down two levels of service from the Base (2027) analysis to the Base (2028) analysis. The eastbound right in the PM at the Driveway and N Fairview Road dropped down two levels of service from the Base (2027) analysis to the Base (2028) analysis.

Opening Year (2028) Conditions

This section outlines an analysis of the Opening year (2028) peak traffic conditions. These are the traffic conditions in the projected year of opening of the proposed development. The traffic generated by the proposed development will occur on off peak hour with the shift changes occurring at 6 am and 6 pm so the traffic generated by the proposed development was not included in the opening year.

The proposed development traffic layout is shown in Figure 10.

7.1. Opening Year (2028) Capacity Analysis

The Opening year (2028) overall intersection LOS for both the signalized and unsignalized intersections can be seen in Table 13. Figure 11 shows the LOS of all movements at the intersections within the study area.

Table 14: Opening Year (2028) Peak-Hour LOS

Intersection		Weekday AM Peak-Hour		Weekday PM Peak-Hour	
		Level of Service	Delay (sec/veh)	Level of Service	Delay (sec/veh)
Signalized Intersections – Overall					
E Washington Avenue & N Fairview Road		B	16.8	C	22.6
E Main Avenue & M-121/Chicago Drive		C	20.2	B	19.0
Unsignalized Intersections					
E Main Avenue & N Fairview Road	NB-L	B	13.6	C	15.6
	NB	D	33.0	C	21.7
	SB-L	D	27.3	E	45.8
	SB	B	14.8	C	18.6
	EB-L	B	14.6	B	14.3
	EB	D	26.2	F	58.9
	WB-L	B	13.2	B	14.3
	WB-T	C	21.4	C	19.3
	WB-R	E	41.9	D	27.1
	Int. Tot.	D	29.1	D	34.2
E Main Avenue & N Carlton Street	SB	C	17.3	C	20.8
	EB-L	A	8.5	A	8.1
Proposed Truck Entrance & N Carlton Street	SB	A	1.8	A	1.0
Proposed Staff Entrance & N Carlton Street	SB	A	7.7	A	7.6
	WB-L	B	10.2	B	10.7
	WB-R	A	9.2	A	9.0
E Washington Avenue & N Carlton Street	NB	C	23.5	C	18.7
	WB-L	A	8.2	A	8.4
N Fairview Road & Driveway	EB-L	C	19.2	C	15.5
	EB-R	A	9.6	A	9.9
E Main Avenue & Zeeland School Driveway	NB	B	11.7	B	11.9
	WB-L	A	9.1	A	8.3

Similar to the Base (2028) analysis, all movements and intersections operate at a passing level of service (LOS D or better) in the AM and PM peak except for the previously failing movements at E Main Avenue and N Fairview Road in the AM and PM. The southbound left/right in the PM at E Main Avenue and N Carlton Street dropped down one level of service from the Base (2028) analysis to the Opening (2028) analysis.

7.2. Left-Turn Lane Analysis

A left turn lane was analyzed for southbound traffic turning left into the proposed staff entrance on N Carlton Street. Section 1.1.5 of MDOT's Geometric Design Guidance document provides guidance for the addition of left-turn lanes at intersections, however there is no guidance for 25 mph and therefore was not utilized in this case. The Ottawa County Road Commission (OCRC) Procedures, Guidelines, and Specifications for Developing Public Roads

document was referenced for a left turn lane warrant as there was not one found for the City of Zeeland. OCRC requires a left turn lane for anticipated left turns of 150 average daily traffic (ADT) from a public roadway into a proposed development. The proposed development does not anticipate a left turn volume of 150 ADT and so is not required based on OCRC requirements. The proposed development intersection with N Carlton Street was modeled in Synchro without a left turn lane in the opening year. The model determined that at this intersection the left turn/southbound movement operates at a level of service A, therefore not requiring a left turn lane. Lastly N Carlton Road is 32 feet wide and could allow a southbound vehicle to pass a left-turner if needed.

8. Conclusions and Recommendations

8.1. Conclusions

Based on the analysis of the existing collected traffic data, there are no intersections with overall failing levels of service during the Existing Year (2025) AM and PM peak hours. However there are three movement with a failing level of service which are the westbound right turn, southbound left turn, and eastbound through/right on E Main Avenue and N Fairview Road. Those passing and failing levels of service at this intersection continue into the Base Year (2027) and Base Year (2028) scenarios.

In the Average Construction (2027) scenario with the average construction traffic added, all intersections continue to operate at levels of service of D and above except the E Main Avenue and N Fairview Road now operates at a failing level of service E in the PM, with the westbound right turn, southbound left turn, and eastbound through/right continuing to be the only movements that are below LOS D. However, as shown, this is an existing issue at this intersection and the proposed construction traffic does not trigger a failing LOS at any of the other intersections. The proposed average construction traffic will have minimum negative impact to traffic volumes and flow within the study area.

In the Peak Construction (2027) scenario with the peak construction traffic added, all intersections continue to operate at levels of service of D and above except the E Main Avenue and N Fairview Road now operates at a failing level of service F. The westbound through, westbound right turn, southbound left turn, and eastbound through/right on E Main Avenue and N Fairview Road are below LOS D. Although this is an existing issue at the E Main Avenue and N Fairview Road intersection, the traffic added from the peak construction overwhelms this intersection and causes it to fail. The proposed construction traffic does not trigger a failing LOS at any of the other intersections. The proposed peak construction traffic is limited to peak hours only during the construction time frame.

In the Opening Year (2028) scenario the proposed development will not impact the peak hour traffic as the proposed development's peak hour is off peak from the surrounding road network's peak hour. All intersections continue to operate at levels of service of D and above. The redistribution of traffic with the new driveway locations improves the E Main Avenue and N

Fairview Road intersection from the Base 2028 to the Opening 2028 year scenario as all movements and the overall intersection delay decrease.

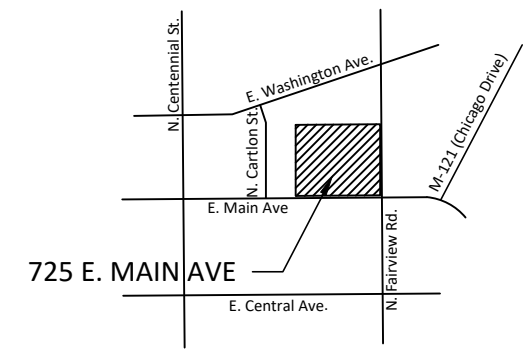
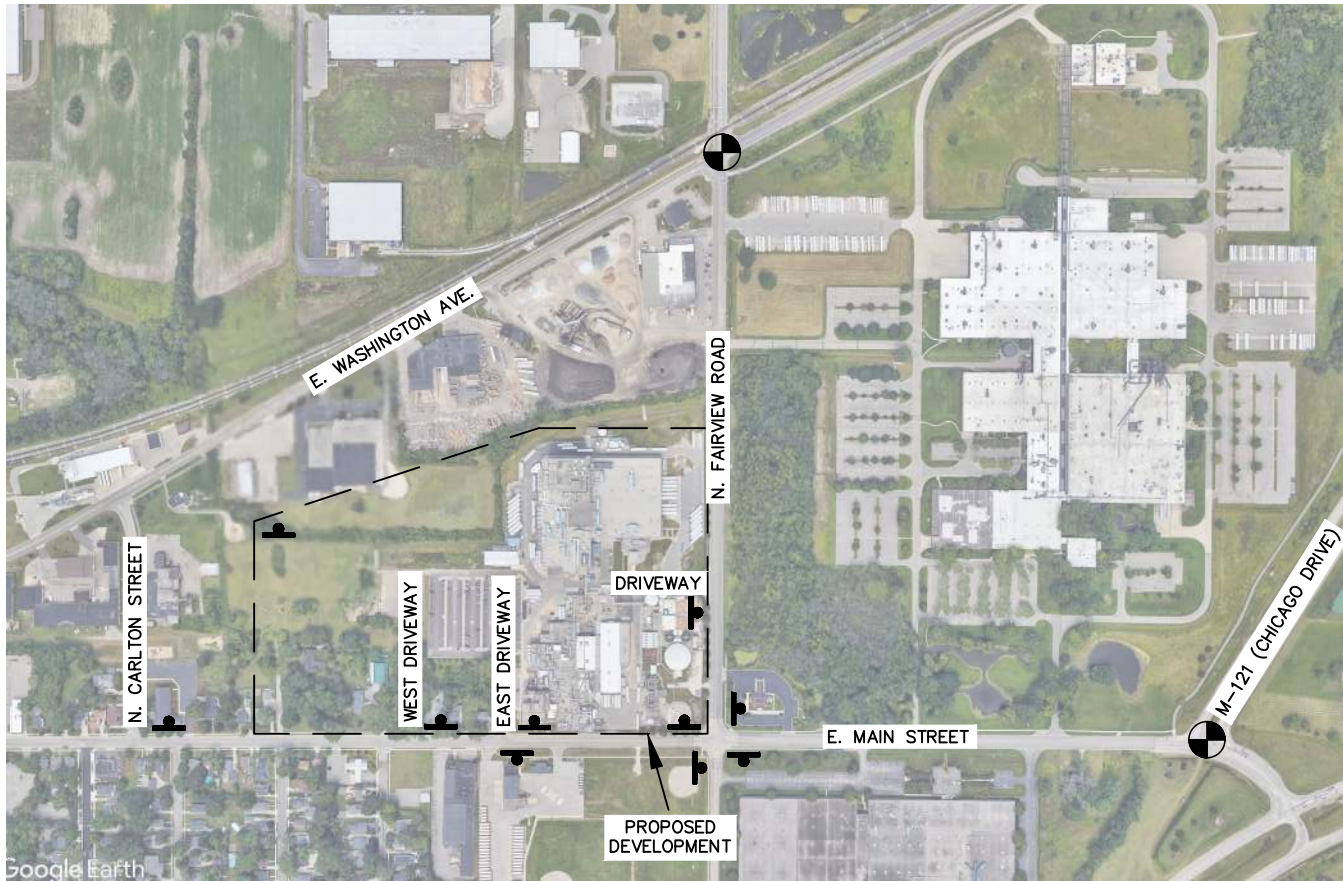
8.2. Recommendations

No permanent roadway network changes are recommended as a part of this study. The concerns regarding traffic difficulties are during the peak construction time frame will be temporary. Additional temporary traffic improvement considerations could include temporary traffic signals, offset contractor arrival times, off site contractor parking with shuttles, and advanced or staggered warning signage and communication.



OTTAWA
COUNTY

COUNTY KEY



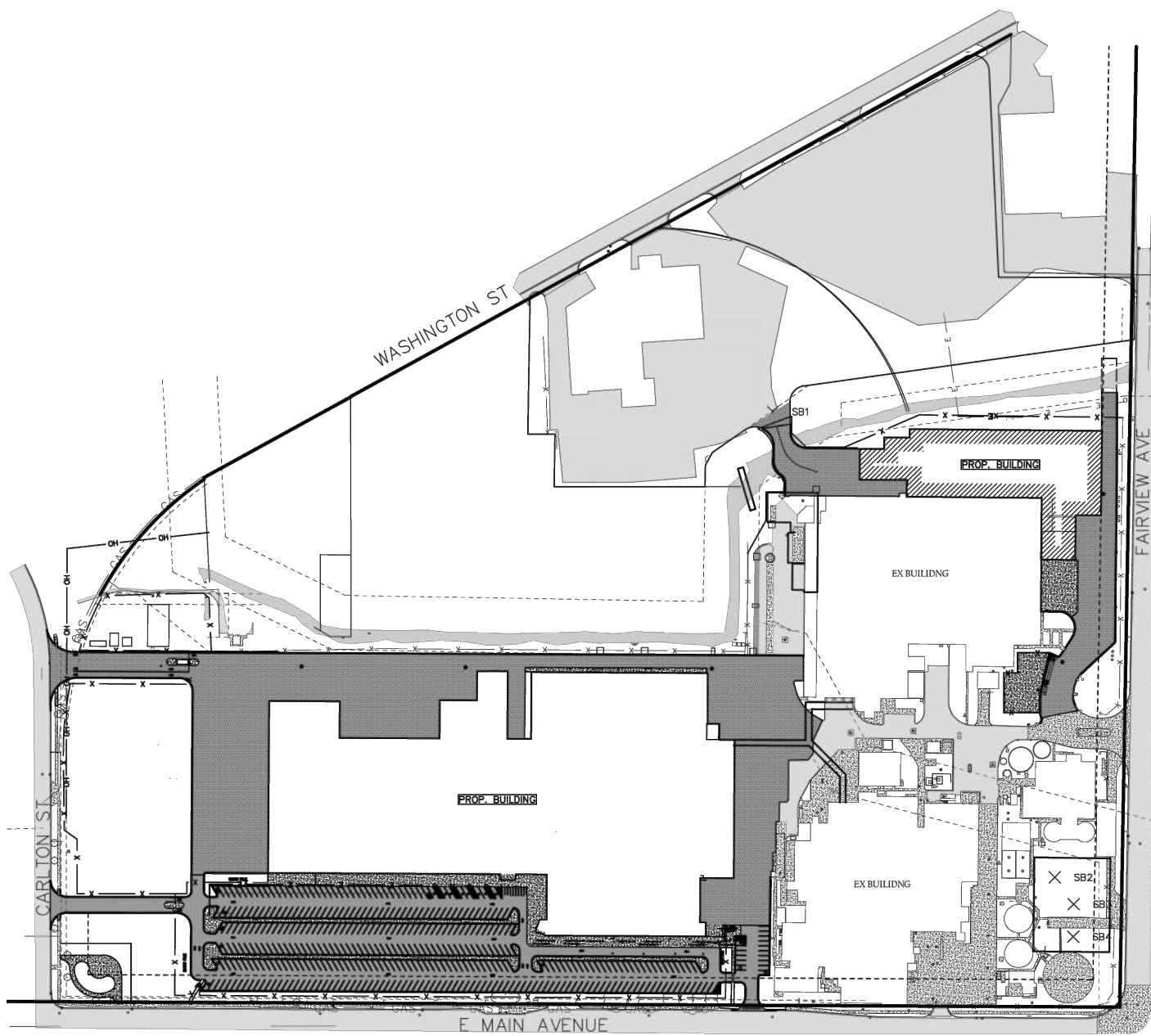
SITE LOCATION & LAYOUT

MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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FIGURE
1



CONCEPT SITE PLAN

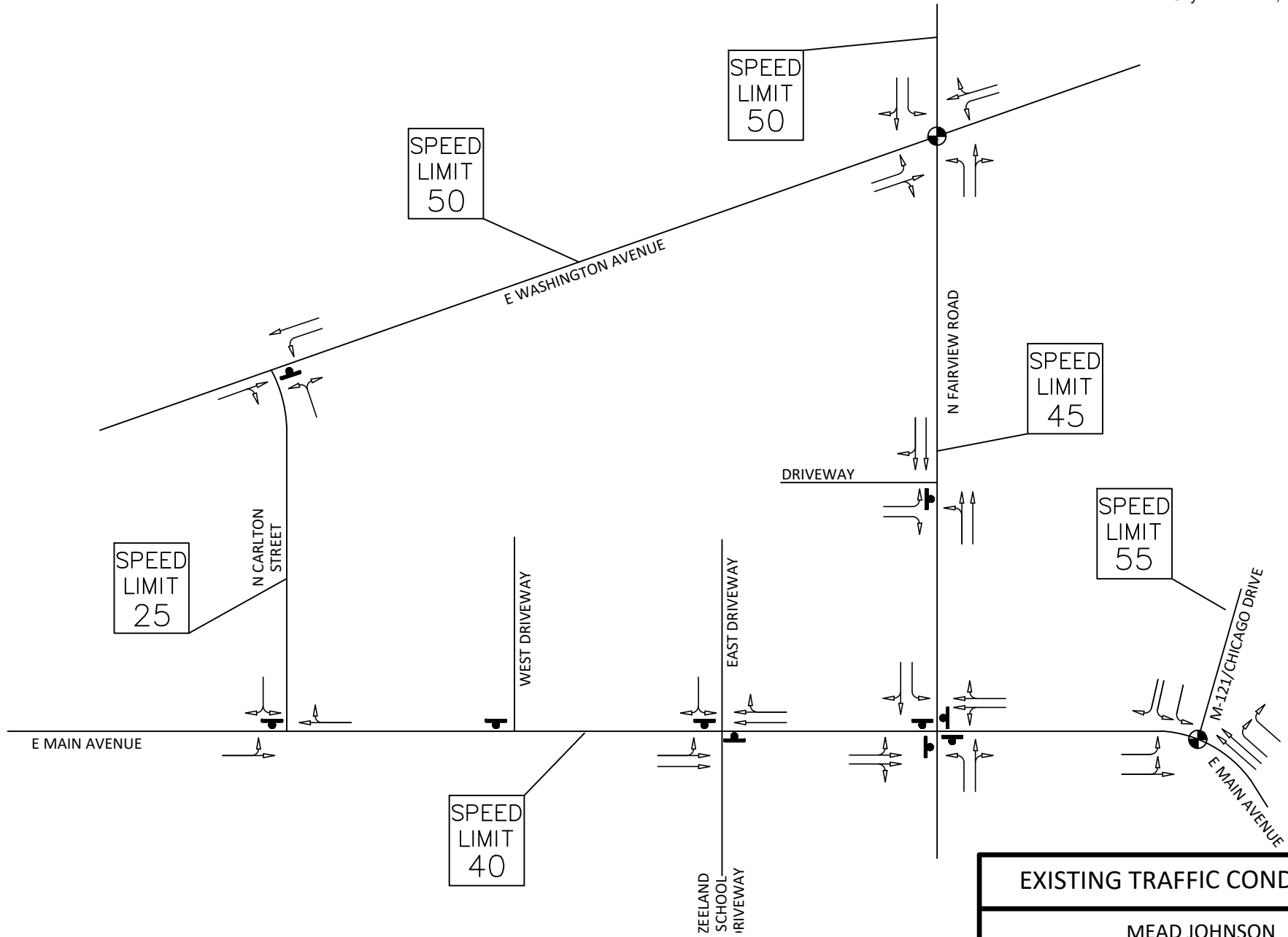
MEAD JOHNSON
RECKITT ZEELAND



Vriesman
& Korhorn

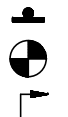
Byron Center, MI
(616) 277-2185
Kalamazoo, MI
(269) 697-7120

FIGURE
2



EXISTING TRAFFIC CONDITIONS

MEAD JOHNSON
 RECKITT ZEELAND



STOP SIGN
 TRAFFIC SIGNAL
 LANE MOVEMENT

XXXX
 (XXXX)
 [XXXX]
 B

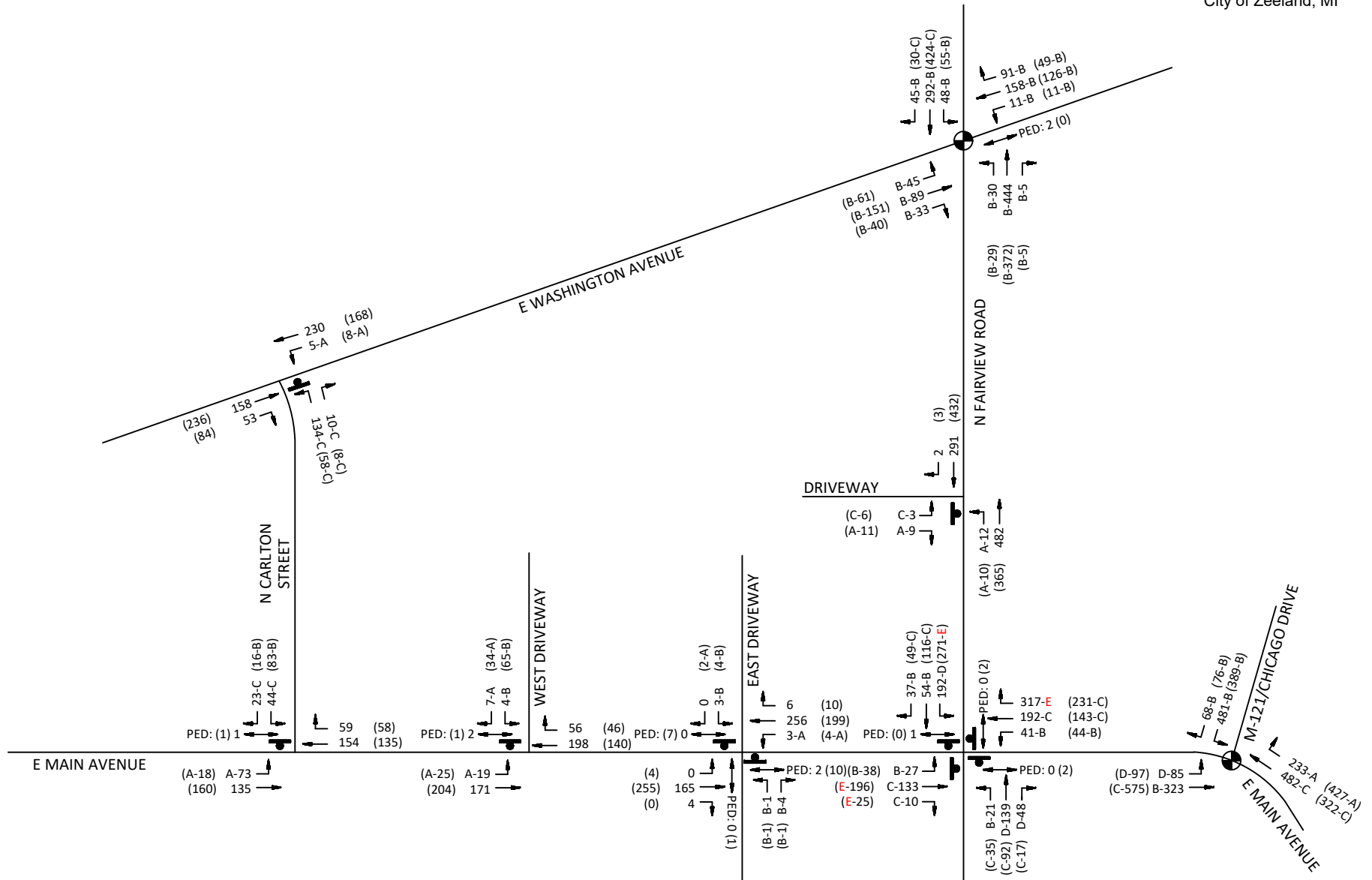
WEEKDAY AM PEAK HOUR VOLUME
 WEEKDAY PM PEAK HOUR VOLUME
 AVERAGE DAILY TRAFFIC
 LEVEL OF SERVICE



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FIGURE
3

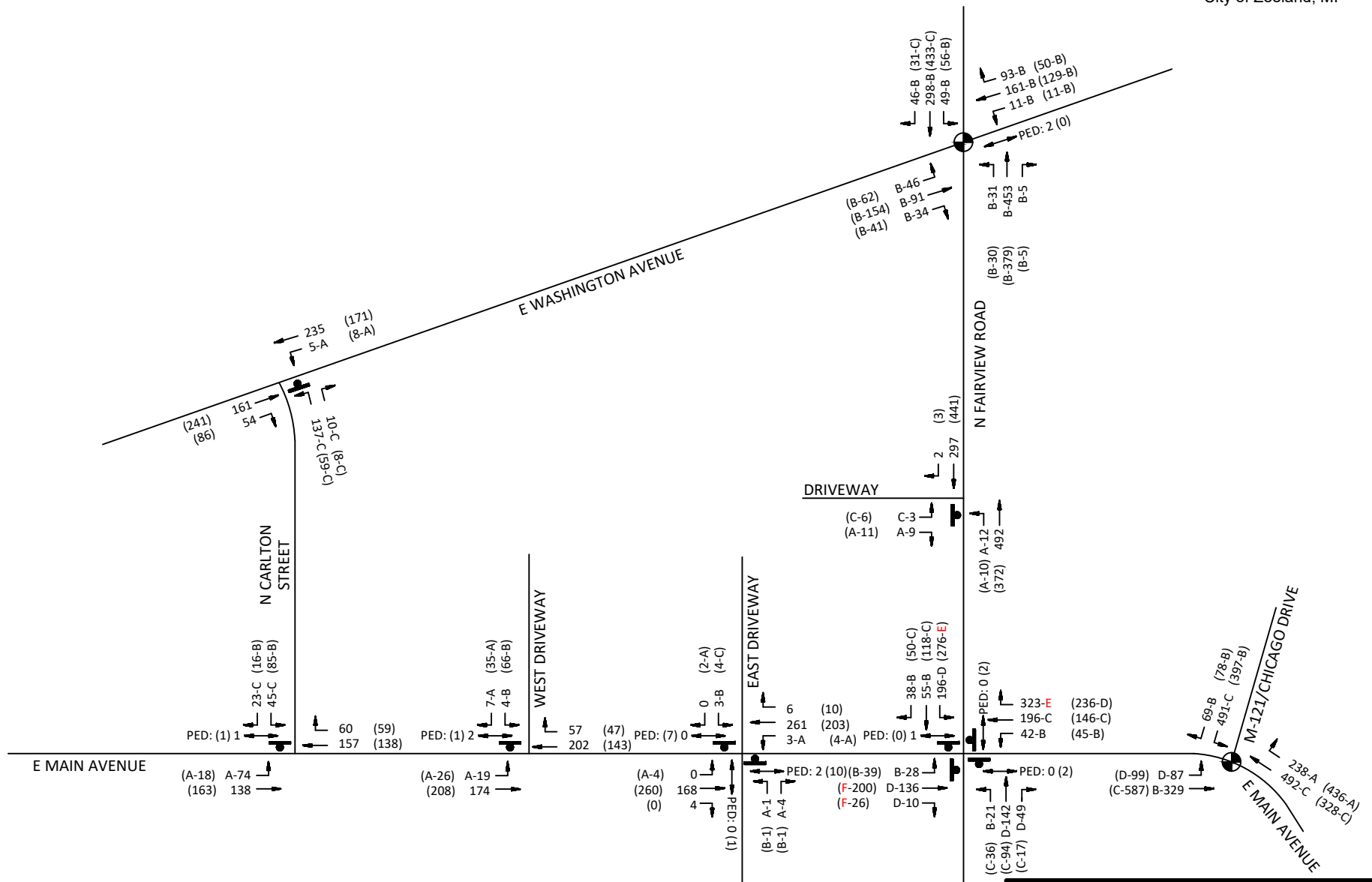


EX. (2025) VOLS & LOS

MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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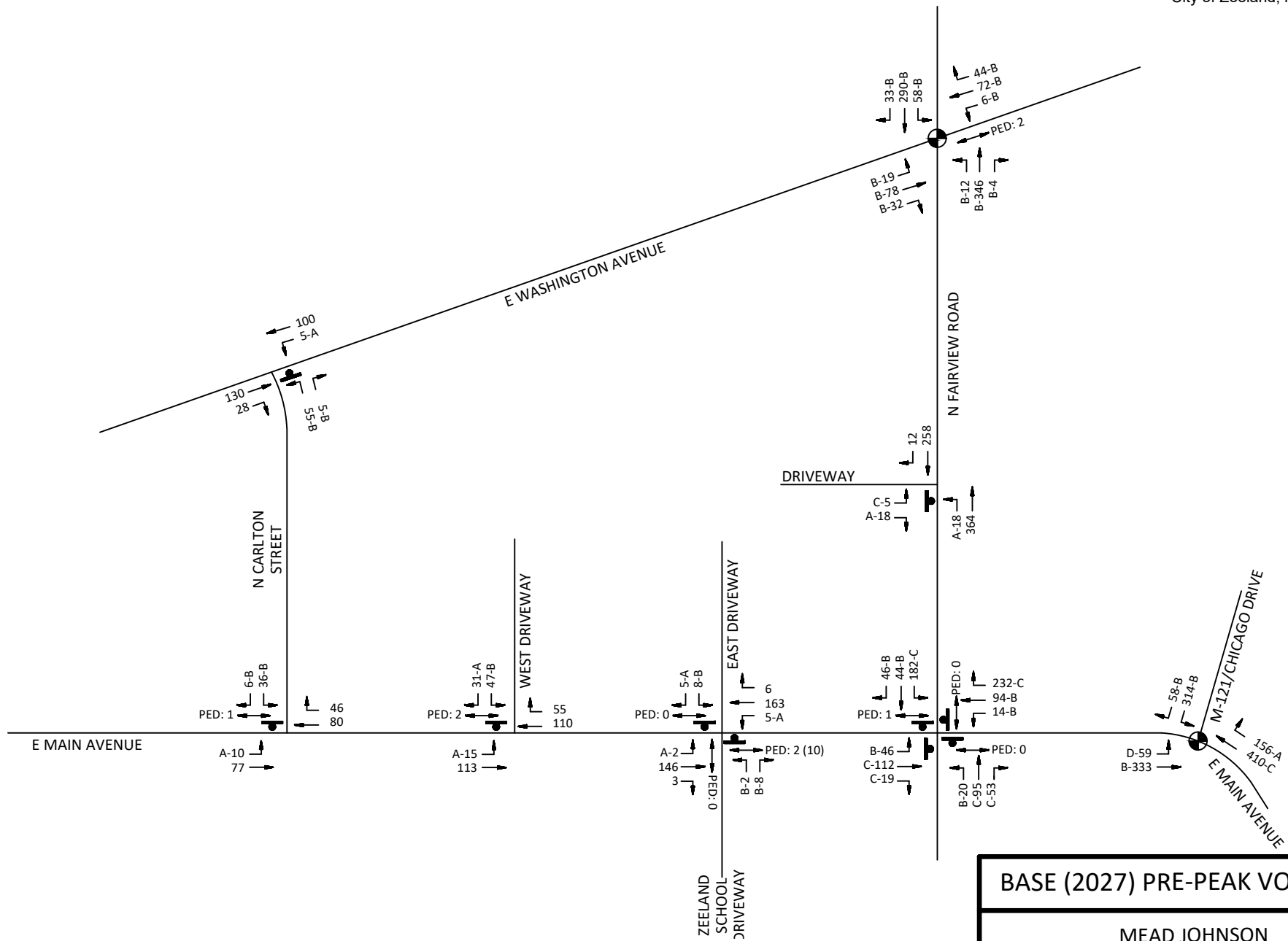


BASE (2027) VOLS & LOS

MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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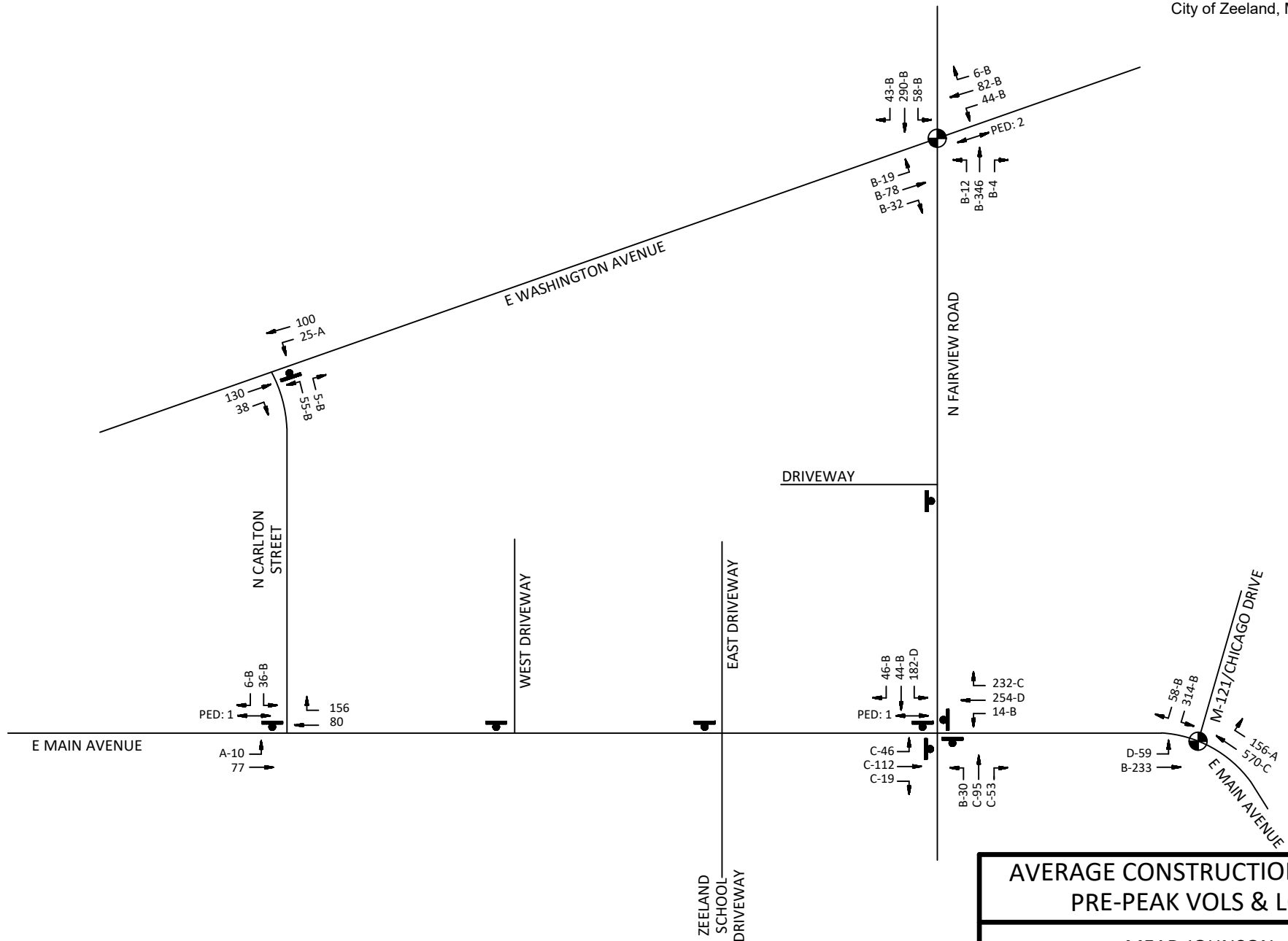


BASE (2027) PRE-PEAK VOLS & LOS

MEAD JOHNSON
RECKITT ZEELAND




	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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**AVERAGE CONSTRUCTION (2027)
PRE-PEAK VOLS & LOS**

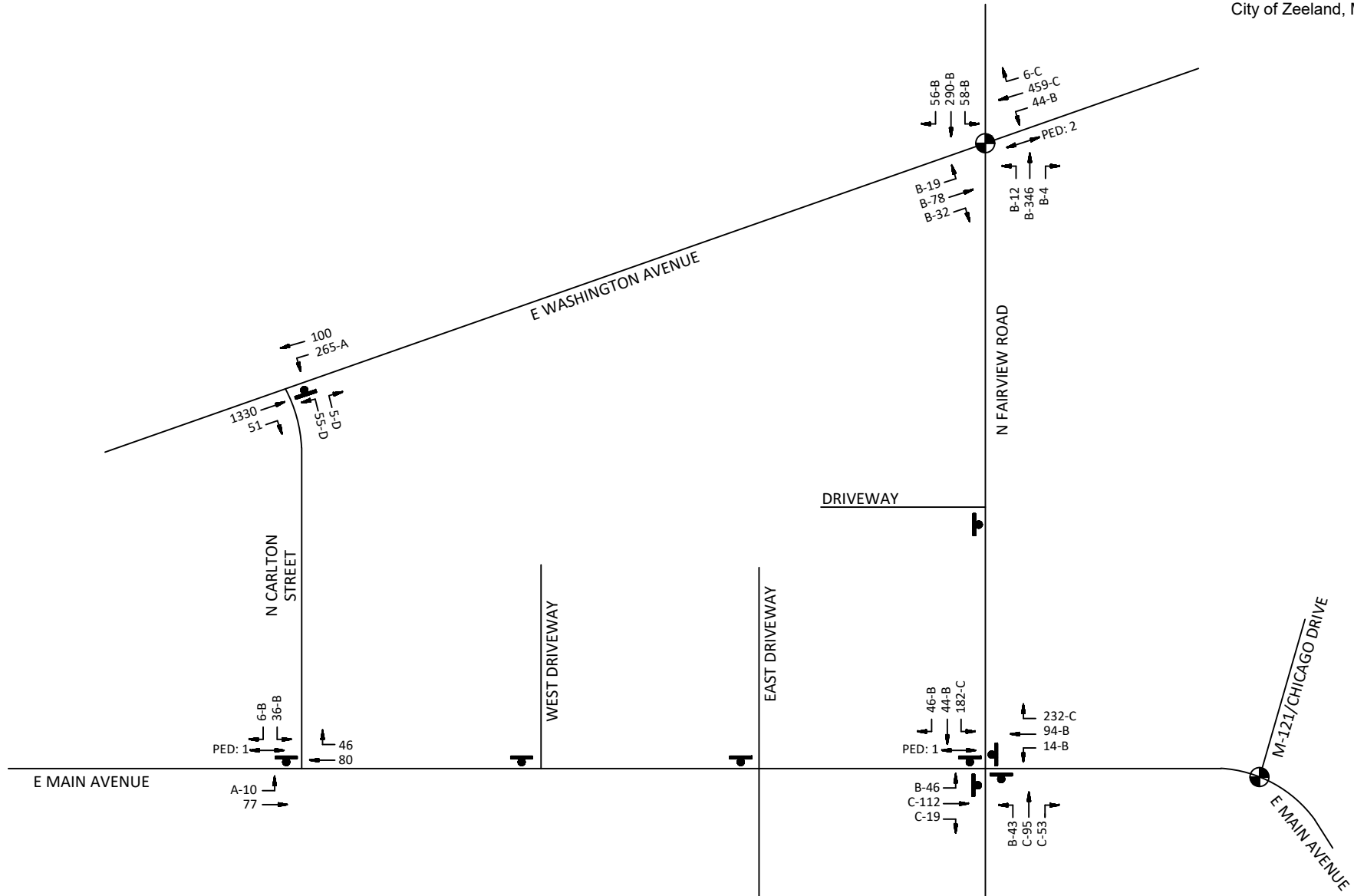
MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE



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FIGURE
7



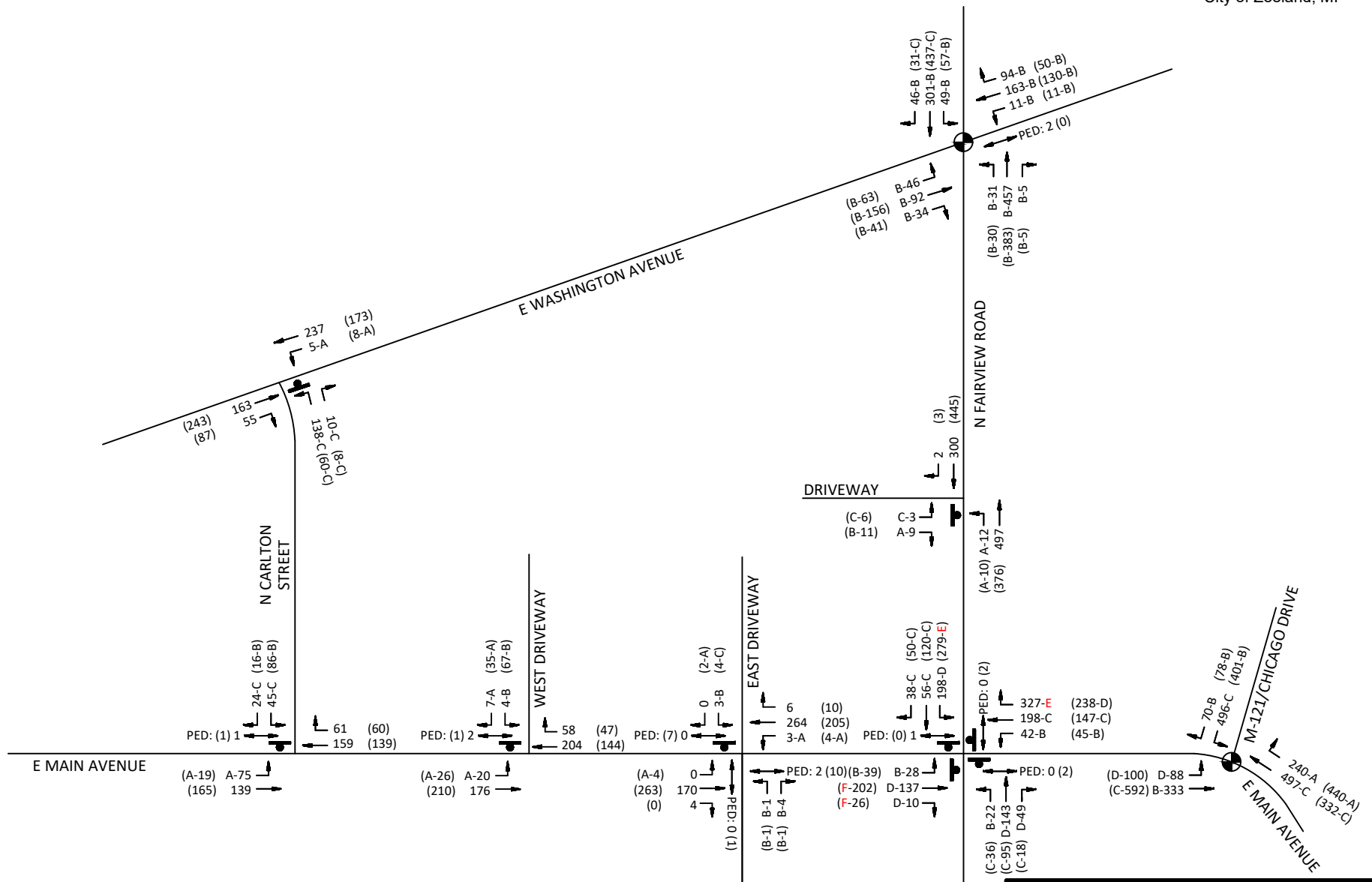
**PEAK CONSTRUCTION (2027)
PRE-PEAK VOLS & LOS**

MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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Kalamazoo, MI (269) 697-7120

**FIGURE
8**

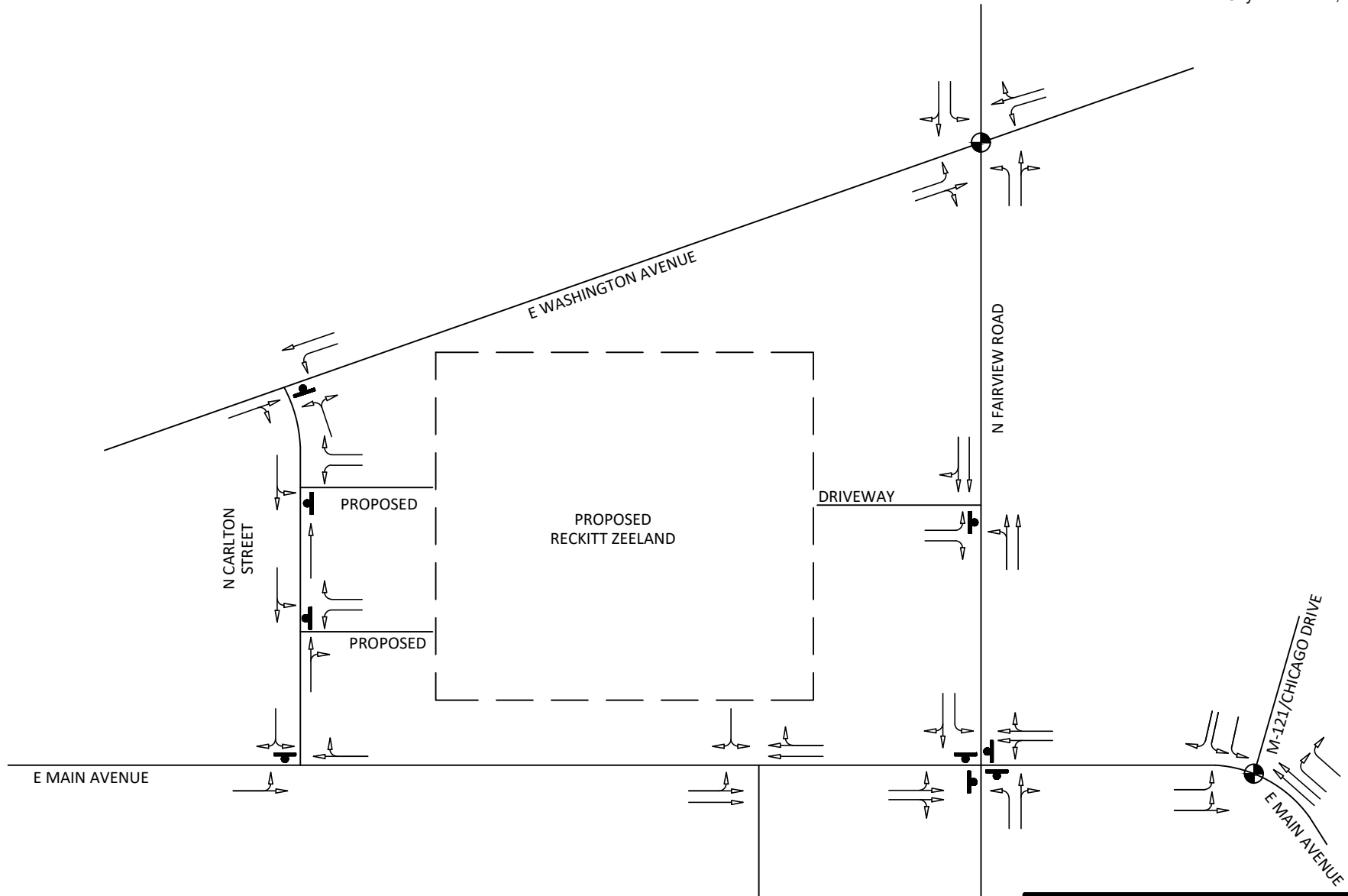


BASE (2028) VOLs & LOS

MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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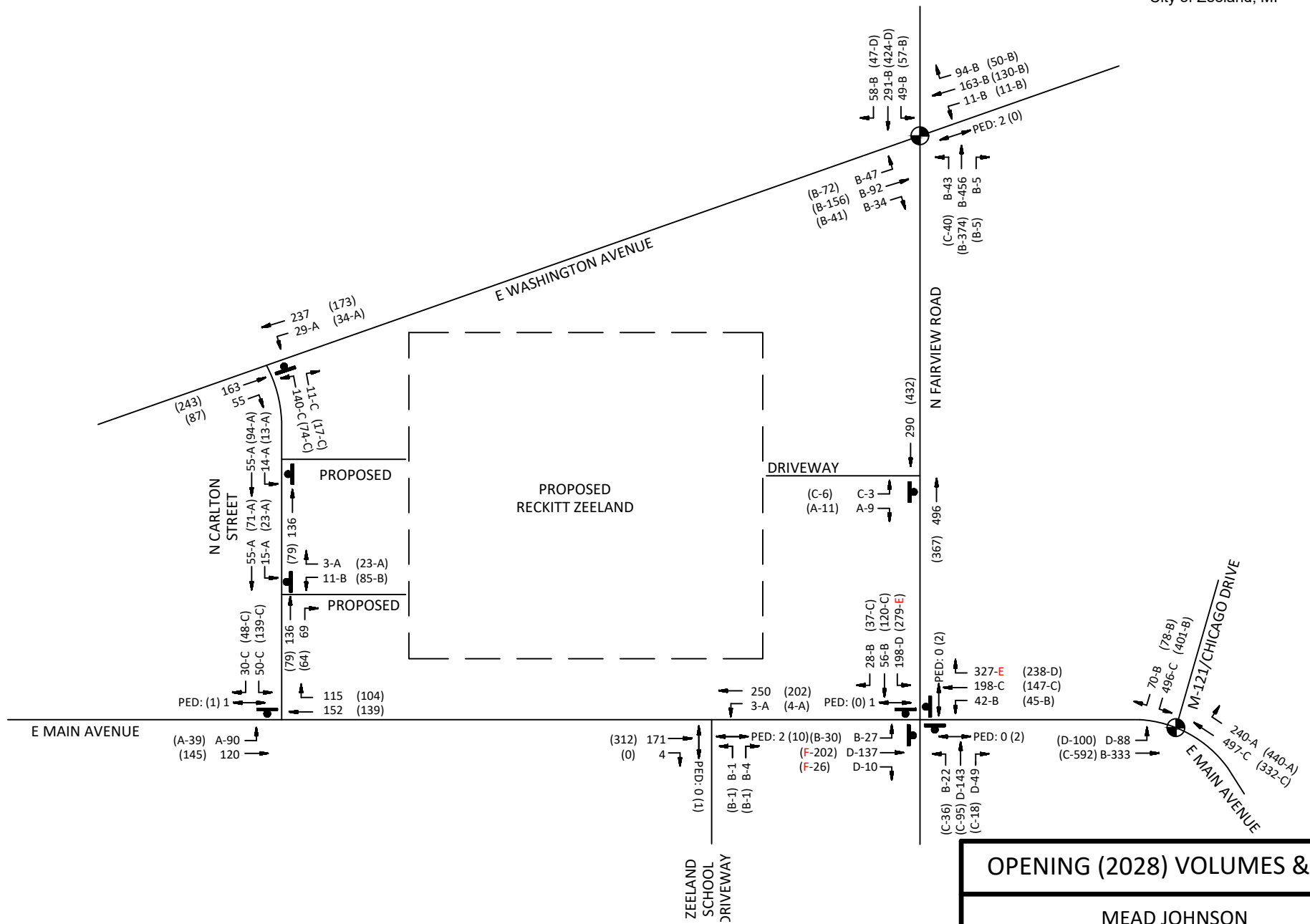


OPENING (2028) TRAFFIC CONDITIONS
 MEAD JOHNSON
 RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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FIGURE 10



OPENING (2028) VOLUMES & LOS

MEAD JOHNSON
RECKITT ZEELAND

	STOP SIGN	XXXX	WEEKDAY AM PEAK HOUR VOLUME
	TRAFFIC SIGNAL	(XXXX)	WEEKDAY PM PEAK HOUR VOLUME
	LANE MOVEMENT	[XXXX]	AVERAGE DAILY TRAFFIC
		B	LEVEL OF SERVICE

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TECHNICAL APPENDIX

PEAK HOUR TURNING MOVEMENT COUNTS

SYNCHRO ANALYSIS RESULTS



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
Grand Rapids, Michigan, United States 49525
6162061902 nick@lacroixtraffic.com

Count Name: Main Ave at
Carlton St
Site Code:
Start Date: 09/09/2025
Page No: 1

Turning Movement Data

Start Time	Main Ave Eastbound				Main Ave Westbound				Carlton St Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
5:00 AM	0	5	0	5	9	4	0	13	2	0	0	2	20
5:15 AM	0	8	0	8	4	0	0	4	4	1	0	5	17
5:30 AM	0	17	0	17	10	6	0	16	8	1	0	9	42
5:45 AM	0	18	0	18	17	12	0	29	9	0	0	9	56
Hourly Total	0	48	0	48	40	22	0	62	23	2	0	25	135
6:00 AM	3	19	0	22	15	14	0	29	7	1	0	8	59
6:15 AM	2	14	0	16	23	10	0	33	8	1	0	9	58
6:30 AM	2	17	0	19	18	8	0	26	6	0	0	6	51
6:45 AM	3	25	0	28	22	13	0	35	14	4	0	18	81
Hourly Total	10	75	0	85	78	45	0	123	35	6	0	41	249
7:00 AM	17	26	0	43	48	16	0	64	6	7	1	13	120
7:15 AM	45	58	0	103	59	19	0	78	15	8	0	23	204
7:30 AM	8	26	0	34	25	11	0	36	9	4	0	13	83
7:45 AM	5	24	0	29	28	14	0	42	8	1	1	9	80
Hourly Total	75	134	0	209	160	60	0	220	38	20	2	58	487
8:00 AM	2	23	1	25	26	8	0	34	3	2	0	5	64
8:15 AM	0	27	1	27	26	13	0	39	7	6	1	13	79
8:30 AM	2	30	0	32	38	13	0	51	11	2	0	13	96
8:45 AM	0	36	0	36	50	8	0	58	8	2	0	10	104
Hourly Total	4	116	2	120	140	42	0	182	29	12	1	41	343
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	46	0	46	45	5	0	50	16	3	1	19	115
4:15 PM	0	34	0	34	32	10	0	42	14	2	1	16	92
4:30 PM	5	37	0	42	36	21	0	57	23	5	1	28	127
4:45 PM	4	32	0	36	42	9	0	51	11	4	0	15	102
Hourly Total	9	149	0	158	155	45	0	200	64	14	3	78	436
5:00 PM	5	47	0	52	31	14	0	45	23	4	0	27	124
5:15 PM	4	44	0	48	26	14	0	40	26	3	0	29	117
5:30 PM	4	42	0	46	37	7	0	44	12	1	0	13	103
5:45 PM	0	32	0	32	38	9	0	47	22	3	0	25	104
Hourly Total	13	165	0	178	132	44	0	176	83	11	0	94	448
6:00 PM	1	29	0	30	26	18	0	44	9	1	0	10	84
6:15 PM	4	28	0	32	30	8	0	38	8	2	0	10	80
6:30 PM	2	20	0	22	21	5	0	26	6	1	2	7	55
6:45 PM	4	27	0	31	17	2	0	19	8	1	0	9	59
Hourly Total	11	104	0	115	94	33	0	127	31	5	2	36	278
Grand Total	122	791	2	913	799	291	0	1090	303	70	8	373	2376
Approach %	13.4	86.6	-	-	73.3	26.7	-	-	81.2	18.8	-	-	-
Total %	5.1	33.3	-	38.4	33.6	12.2	-	45.9	12.8	2.9	-	15.7	-
Lights	122	780	-	902	781	284	-	1065	290	70	-	360	2327
% Lights	100.0	98.6	-	98.8	97.7	97.6	-	97.7	95.7	100.0	-	96.5	97.9
Mediums	0	11	-	11	16	7	-	23	12	0	-	12	46
% Mediums	0.0	1.4	-	1.2	2.0	2.4	-	2.1	4.0	0.0	-	3.2	1.9
Articulated Trucks	0	0	-	0	2	0	-	2	1	0	-	1	3
% Articulated Trucks	0.0	0.0	-	0.0	0.3	0.0	-	0.2	0.3	0.0	-	0.3	0.1
Pedestrians	-	-	2	-	-	-	0	-	-	-	8	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
Grand Rapids, Michigan, United States 49525
6162061902 nick@lacroixtraffic.com

Count Name: Main Ave at
Carlton St
Site Code:
Start Date: 09/09/2025
Page No: 2

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Main Ave Eastbound				Main Ave Westbound				Carlton St Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
6:45 AM	3	25	0	28	22	13	0	35	14	4	0	18	81
7:00 AM	17	26	0	43	48	16	0	64	6	7	1	13	120
7:15 AM	45	58	0	103	59	19	0	78	15	8	0	23	204
7:30 AM	8	26	0	34	25	11	0	36	9	4	0	13	83
Total	73	135	0	208	154	59	0	213	44	23	1	67	488
Approach %	35.1	64.9	-	-	72.3	27.7	-	-	65.7	34.3	-	-	-
Total %	15.0	27.7	-	42.6	31.6	12.1	-	43.6	9.0	4.7	-	13.7	-
PHF	0.406	0.582	-	0.505	0.653	0.776	-	0.683	0.733	0.719	-	0.728	0.598
Lights	73	135	-	208	151	57	-	208	42	23	-	65	481
% Lights	100.0	100.0	-	100.0	98.1	96.6	-	97.7	95.5	100.0	-	97.0	98.6
Mediums	0	0	-	0	3	2	-	5	1	0	-	1	6
% Mediums	0.0	0.0	-	0.0	1.9	3.4	-	2.3	2.3	0.0	-	1.5	1.2
Articulated Trucks	0	0	-	0	0	0	-	0	1	0	-	1	1
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	2.3	0.0	-	1.5	0.2
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Main Ave Eastbound				Main Ave Westbound				Carlton St Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
4:30 PM	5	37	0	42	36	21	0	57	23	5	1	28	127
4:45 PM	4	32	0	36	42	9	0	51	11	4	0	15	102
5:00 PM	5	47	0	52	31	14	0	45	23	4	0	27	124
5:15 PM	4	44	0	48	26	14	0	40	26	3	0	29	117
Total	18	160	0	178	135	58	0	193	83	16	1	99	470
Approach %	10.1	89.9	-	-	69.9	30.1	-	-	83.8	16.2	-	-	-
Total %	3.8	34.0	-	37.9	28.7	12.3	-	41.1	17.7	3.4	-	21.1	-
PHF	0.900	0.851	-	0.856	0.804	0.690	-	0.846	0.798	0.800	-	0.853	0.925
Lights	18	159	-	177	135	58	-	193	82	16	-	98	468
% Lights	100.0	99.4	-	99.4	100.0	100.0	-	100.0	98.8	100.0	-	99.0	99.6
Mediums	0	1	-	1	0	0	-	0	1	0	-	1	2
% Mediums	0.0	0.6	-	0.6	0.0	0.0	-	0.0	1.2	0.0	-	1.0	0.4
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
Grand Rapids, Michigan, United States 49525
6162061902 nick@lacroixtraffic.com

Count Name: Main Ave at
Existing West Driveway
Site Code:
Start Date: 09/09/2025
Page No: 1

Turning Movement Data

Start Time	Main Ave Eastbound				Main Ave Westbound				Existing West Driveway Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
12:00 AM	0	1	0	1	0	1	0	1	0	1	0	1	3
12:15 AM	0	1	0	1	2	0	0	2	0	2	0	2	5
12:30 AM	0	2	0	2	1	0	0	1	1	0	0	1	4
12:45 AM	0	0	0	0	1	0	0	1	0	1	0	1	2
Hourly Total	0	4	0	4	4	1	0	5	1	4	0	5	14
1:00 AM	0	1	0	1	1	0	0	1	2	0	0	2	4
1:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	2
1:30 AM	0	0	0	0	0	1	0	1	0	2	0	2	3
1:45 AM	0	0	0	0	2	0	0	2	1	1	0	2	4
Hourly Total	0	2	0	2	3	1	0	4	4	3	0	7	13
2:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
2:15 AM	1	1	0	2	1	0	0	1	0	0	0	0	3
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	1	0	0	1	0	1	0	1	2
Hourly Total	1	1	0	2	2	0	0	2	0	2	0	2	6
3:00 AM	0	0	0	0	2	0	0	2	1	0	0	1	3
3:15 AM	1	1	0	2	1	0	0	1	0	0	0	0	3
3:30 AM	0	3	0	3	3	1	0	4	0	0	0	0	7
3:45 AM	0	1	0	1	3	2	0	5	1	0	0	1	7
Hourly Total	1	5	0	6	9	3	0	12	2	0	0	2	20
4:00 AM	0	1	0	1	2	1	0	3	2	0	0	2	6
4:15 AM	0	4	0	4	5	0	0	5	0	0	0	0	9
4:30 AM	0	6	0	6	6	3	0	9	0	1	0	1	16
4:45 AM	2	1	0	3	6	3	0	9	0	3	0	3	15
Hourly Total	2	12	0	14	19	7	0	26	2	4	0	6	46
5:00 AM	5	3	0	8	8	7	0	15	0	2	0	2	25
5:15 AM	7	6	0	13	3	12	0	15	1	0	0	1	29
5:30 AM	13	13	0	26	14	39	0	53	3	0	0	3	82
5:45 AM	10	18	0	28	17	42	0	59	1	1	0	2	89
Hourly Total	35	40	0	75	42	100	0	142	5	3	0	8	225
6:00 AM	5	24	0	29	16	8	0	24	32	15	1	47	100
6:15 AM	2	24	0	26	29	9	0	38	9	10	0	19	83
6:30 AM	1	22	0	23	28	16	0	44	4	3	1	7	74
6:45 AM	7	41	0	48	35	21	0	56	1	2	2	3	107
Hourly Total	15	111	0	126	108	54	0	162	46	30	4	76	364
7:00 AM	3	31	0	34	59	18	0	77	1	2	0	3	114
7:15 AM	7	65	0	72	65	8	0	73	0	2	0	2	147
7:30 AM	2	34	0	36	39	9	0	48	2	1	0	3	87
7:45 AM	5	32	0	37	31	12	0	43	2	2	2	4	84
Hourly Total	17	162	0	179	194	47	0	241	5	7	2	12	432
8:00 AM	3	26	0	29	34	18	0	52	2	0	1	2	83
8:15 AM	2	33	1	35	39	10	0	49	1	0	1	1	85
8:30 AM	2	39	0	41	45	8	0	53	2	1	0	3	97
8:45 AM	1	42	0	43	57	5	0	62	4	3	0	7	112
Hourly Total	8	140	1	148	175	41	0	216	9	4	2	13	377
9:00 AM	3	20	0	23	34	9	0	43	1	2	0	3	69
9:15 AM	2	18	0	20	32	6	0	38	1	3	0	4	62
9:30 AM	5	24	0	29	24	5	0	29	5	1	0	6	64
9:45 AM	1	16	0	17	33	6	0	39	2	1	0	3	59
Hourly Total	11	78	0	89	123	26	0	149	9	7	0	16	254
10:00 AM	0	25	0	25	26	2	0	28	1	3	0	4	57
10:15 AM	0	28	0	28	31	4	0	35	1	0	0	1	64
10:30 AM	1	21	0	22	20	1	0	21	2	2	0	4	47
10:45 AM	1	21	0	22	41	1	0	42	1	0	2	1	65
Hourly Total	2	95	0	97	118	8	0	126	5	5	2	10	233
11:00 AM	0	29	0	29	32	1	0	33	2	0	0	2	64
11:15 AM	1	35	0	36	24	0	0	24	3	1	0	4	64
11:30 AM	1	30	0	31	32	3	0	35	1	3	0	4	70
11:45 AM	2	43	0	45	37	0	0	37	13	11	0	24	106
Hourly Total	4	137	0	141	125	4	0	129	19	15	0	34	304
12:00 PM	4	35	0	39	37	9	0	46	5	3	2	8	93

12:15 PM	6	41	0	47	45	11	0	56	6	3	0	9	112
12:30 PM	5	25	0	30	35	3	0	38	5	3	3	8	76
12:45 PM	5	32	0	37	32	4	0	36	2	3	0	5	78
Hourly Total	20	133	0	153	149	27	0	176	18	12	5	30	359
1:00 PM	2	33	0	35	22	4	0	26	3	2	0	5	66
1:15 PM	3	38	0	41	33	6	0	39	0	3	1	3	83
1:30 PM	2	32	0	34	25	3	0	28	2	1	0	3	65
1:45 PM	1	39	0	40	30	1	0	31	8	1	0	9	80
Hourly Total	8	142	0	150	110	14	0	124	13	7	1	20	294
2:00 PM	0	40	0	40	35	4	0	39	5	1	1	6	85
2:15 PM	1	27	0	28	42	2	0	44	25	5	0	30	102
2:30 PM	2	54	0	56	43	0	0	43	10	1	1	11	110
2:45 PM	0	47	0	47	36	3	0	39	10	4	0	14	100
Hourly Total	3	168	0	171	156	9	0	165	50	11	2	61	397
3:00 PM	2	46	1	48	38	1	0	39	9	3	1	12	99
3:15 PM	2	40	0	42	33	3	0	36	9	6	0	15	93
3:30 PM	1	49	0	50	44	1	0	45	20	1	0	21	116
3:45 PM	1	44	0	45	46	1	0	47	8	2	0	10	102
Hourly Total	6	179	1	185	161	6	0	167	46	12	1	58	410
4:00 PM	1	59	0	60	49	2	0	51	18	4	0	22	133
4:15 PM	1	47	0	48	38	1	0	39	16	5	0	21	108
4:30 PM	1	58	0	59	49	3	0	52	9	4	1	13	124
4:45 PM	2	33	0	35	51	1	0	52	7	1	0	8	95
Hourly Total	5	197	0	202	187	7	0	194	50	14	1	64	460
5:00 PM	1	64	0	65	39	3	0	42	9	2	5	11	118
5:15 PM	6	68	0	74	33	12	0	45	11	5	1	16	135
5:30 PM	9	44	0	53	42	17	0	59	8	4	0	12	124
5:45 PM	10	50	0	60	39	17	0	56	2	6	0	8	124
Hourly Total	26	226	0	252	153	49	0	202	30	17	6	47	501
6:00 PM	0	42	0	42	26	0	0	26	44	19	0	63	131
6:15 PM	0	32	0	32	32	0	0	32	16	11	0	27	91
6:30 PM	0	17	0	17	21	0	0	21	3	0	2	3	41
6:45 PM	0	34	0	34	21	0	0	21	2	1	0	3	58
Hourly Total	0	125	0	125	100	0	0	100	65	31	2	96	321
7:00 PM	0	24	0	24	15	0	0	15	2	1	1	3	42
7:15 PM	1	20	0	21	17	1	0	18	2	1	0	3	42
7:30 PM	0	26	0	26	18	0	0	18	1	0	1	1	45
7:45 PM	1	24	0	25	19	2	0	21	5	0	1	5	51
Hourly Total	2	94	0	96	69	3	0	72	10	2	3	12	180
8:00 PM	0	24	0	24	15	2	0	17	1	0	1	1	42
8:15 PM	1	21	0	22	12	0	0	12	2	2	0	4	38
8:30 PM	0	15	0	15	12	0	0	12	3	1	0	4	31
8:45 PM	2	11	0	13	8	3	0	11	0	1	0	1	25
Hourly Total	3	71	0	74	47	5	0	52	6	4	1	10	136
9:00 PM	3	7	0	10	10	0	0	10	1	2	0	3	23
9:15 PM	0	9	0	9	9	0	0	9	1	2	0	3	21
9:30 PM	4	19	0	23	9	2	0	11	0	0	0	0	34
9:45 PM	0	12	0	12	3	1	0	4	1	0	0	1	17
Hourly Total	7	47	0	54	31	3	0	34	3	4	0	7	95
10:00 PM	0	5	0	5	5	1	0	6	2	0	0	2	13
10:15 PM	0	3	0	3	10	1	0	11	0	0	0	0	14
10:30 PM	0	9	0	9	2	0	0	2	0	0	0	0	11
10:45 PM	0	4	0	4	3	1	0	4	1	0	0	1	9
Hourly Total	0	21	0	21	20	3	0	23	3	0	0	3	47
11:00 PM	0	5	0	5	4	0	0	4	3	1	0	4	13
11:15 PM	0	2	0	2	0	2	0	2	0	0	0	0	4
11:30 PM	1	5	0	6	3	0	0	3	1	0	0	1	10
11:45 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
Hourly Total	1	13	0	14	8	2	0	10	4	1	0	5	29
Grand Total	177	2203	2	2380	2113	420	0	2533	405	199	32	604	5517
Approach %	7.4	92.6	-	-	83.4	16.6	-	-	67.1	32.9	-	-	-
Total %	3.2	39.9	-	43.1	38.3	7.6	-	45.9	7.3	3.6	-	10.9	-
Lights	177	2115	-	2292	2021	417	-	2438	400	199	-	599	5329
% Lights	100.0	96.0	-	96.3	95.6	99.3	-	96.2	98.8	100.0	-	99.2	96.6
Mediums	0	50	-	50	59	3	-	62	5	0	-	5	117
% Mediums	0.0	2.3	-	2.1	2.8	0.7	-	2.4	1.2	0.0	-	0.8	2.1
Articulated Trucks	0	38	-	38	33	0	-	33	0	0	-	0	71
% Articulated Trucks	0.0	1.7	-	1.6	1.6	0.0	-	1.3	0.0	0.0	-	0.0	1.3
Pedestrians	-	-	2	-	-	-	0	-	-	-	32	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
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6162061902 nick@lacroixtraffic.com

Count Name: Main Ave at
Existing West Driveway
Site Code:
Start Date: 09/09/2025
Page No: 3

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Main Ave Eastbound				Main Ave Westbound				Existing West Driveway Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
6:45 AM	7	41	0	48	35	21	0	56	1	2	2	3	107
7:00 AM	3	31	0	34	59	18	0	77	1	2	0	3	114
7:15 AM	7	65	0	72	65	8	0	73	0	2	0	2	147
7:30 AM	2	34	0	36	39	9	0	48	2	1	0	3	87
Total	19	171	0	190	198	56	0	254	4	7	2	11	455
Approach %	10.0	90.0	-	-	78.0	22.0	-	-	36.4	63.6	-	-	-
Total %	4.2	37.6	-	41.8	43.5	12.3	-	55.8	0.9	1.5	-	2.4	-
PHF	0.679	0.658	-	0.660	0.762	0.667	-	0.825	0.500	0.875	-	0.917	0.774
Lights	19	168	-	187	189	55	-	244	3	7	-	10	441
% Lights	100.0	98.2	-	98.4	95.5	98.2	-	96.1	75.0	100.0	-	90.9	96.9
Mediums	0	2	-	2	8	1	-	9	1	0	-	1	12
% Mediums	0.0	1.2	-	1.1	4.0	1.8	-	3.5	25.0	0.0	-	9.1	2.6
Articulated Trucks	0	1	-	1	1	0	-	1	0	0	-	0	2
% Articulated Trucks	0.0	0.6	-	0.5	0.5	0.0	-	0.4	0.0	0.0	-	0.0	0.4
Pedestrians	-	-	0	-	-	-	0	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (5:15 PM)

Start Time	Main Ave Eastbound				Main Ave Westbound				Existing West Driveway Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
5:15 PM	6	68	0	74	33	12	0	45	11	5	1	16	135
5:30 PM	9	44	0	53	42	17	0	59	8	4	0	12	124
5:45 PM	10	50	0	60	39	17	0	56	2	6	0	8	124
6:00 PM	0	42	0	42	26	0	0	26	44	19	0	63	131
Total	25	204	0	229	140	46	0	186	65	34	1	99	514
Approach %	10.9	89.1	-	-	75.3	24.7	-	-	65.7	34.3	-	-	-
Total %	4.9	39.7	-	44.6	27.2	8.9	-	36.2	12.6	6.6	-	19.3	-
PHF	0.625	0.750	-	0.774	0.833	0.676	-	0.788	0.369	0.447	-	0.393	0.952
Lights	25	202	-	227	139	46	-	185	65	34	-	99	511
% Lights	100.0	99.0	-	99.1	99.3	100.0	-	99.5	100.0	100.0	-	100.0	99.4
Mediums	0	2	-	2	1	0	-	1	0	0	-	0	3
% Mediums	0.0	1.0	-	0.9	0.7	0.0	-	0.5	0.0	0.0	-	0.0	0.6
Articulated Trucks	0	0	-	0	0	0	-	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
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Count Name: Main Ave at
Existing East Driveway
Site Code:
Start Date: 09/09/2025
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Turning Movement Data

Start Time	Main Ave Eastbound					Main Ave Westbound					Zeeland Schools Drwy Northbound					Existing East Driveway Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
12:00 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
12:15 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
12:30 AM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
12:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	4	0	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
1:00 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
1:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:45 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	4
Hourly Total	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	10
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
2:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
3:00 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
3:15 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
3:30 AM	0	3	0	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
3:45 AM	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	6
Hourly Total	0	6	0	0	6	0	10	0	0	10	1	0	0	0	1	0	0	1	0	1	18
4:00 AM	0	3	0	0	3	0	3	1	0	4	0	0	0	0	0	1	0	0	0	1	8
4:15 AM	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	8
4:30 AM	0	6	0	0	6	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	13
4:45 AM	0	1	0	0	1	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	9
Hourly Total	0	13	0	0	13	0	23	1	0	24	0	0	0	0	0	1	0	0	0	1	38
5:00 AM	0	3	0	0	3	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	19
5:15 AM	2	5	0	0	7	0	16	0	0	16	0	0	0	0	0	0	0	2	0	2	25
5:30 AM	0	15	0	0	15	0	63	0	0	63	0	0	0	0	0	1	0	0	0	1	79
5:45 AM	0	16	0	0	16	1	62	0	0	63	0	0	0	0	0	2	0	3	0	5	84
Hourly Total	2	39	0	0	41	1	157	0	0	158	0	0	0	0	0	3	0	5	0	8	207
6:00 AM	0	53	2	0	55	0	23	2	0	25	0	0	3	0	3	4	0	2	0	6	89
6:15 AM	0	30	1	0	31	5	38	1	0	44	0	0	0	0	0	1	0	2	0	3	78
6:30 AM	2	23	0	0	25	0	43	0	0	43	2	0	4	0	6	1	0	1	0	2	76
6:45 AM	0	37	0	0	37	0	56	3	0	59	0	0	1	1	1	2	0	0	0	2	99
Hourly Total	2	143	3	0	148	5	160	6	0	171	2	0	8	1	10	8	0	5	0	13	342
7:00 AM	0	31	1	0	32	0	77	0	0	77	0	0	0	0	0	0	0	0	0	0	109
7:15 AM	0	62	3	0	65	1	78	2	0	81	0	0	0	1	0	0	0	0	0	0	146
7:30 AM	0	35	0	0	35	2	45	1	0	48	1	0	3	0	4	1	0	0	0	1	88
7:45 AM	1	32	0	0	33	1	50	0	0	51	0	0	1	0	1	0	0	0	1	0	85
Hourly Total	1	160	4	0	165	4	250	3	0	257	1	0	4	1	5	1	0	0	1	1	428
8:00 AM	0	29	0	0	29	1	53	0	0	54	0	0	0	0	0	0	0	0	0	0	83
8:15 AM	0	34	0	0	34	1	49	0	0	50	1	0	0	0	1	0	0	0	0	0	85
8:30 AM	0	32	8	0	40	8	50	2	0	60	2	0	0	0	2	0	0	0	0	0	102
8:45 AM	0	44	3	0	47	7	62	1	0	70	0	0	2	2	2	0	0	0	0	0	119
Hourly Total	0	139	11	0	150	17	214	3	0	234	3	0	2	2	5	0	0	0	0	0	389
9:00 AM	0	22	0	0	22	2	42	1	0	45	0	0	4	2	4	1	0	0	0	1	72
9:15 AM	1	17	1	0	19	0	37	0	0	37	0	0	0	2	0	1	0	0	0	1	57
9:30 AM	1	27	0	0	28	0	31	0	0	31	0	0	1	0	1	0	0	0	0	0	60
9:45 AM	0	19	0	0	19	0	37	1	0	38	0	0	0	0	0	0	0	0	0	0	57
Hourly Total	2	85	1	0	88	2	147	2	0	151	0	0	5	4	5	2	0	0	0	2	246
10:00 AM	0	26	0	0	26	0	27	0	0	27	0	0	1	0	1	0	0	1	0	1	55
10:15 AM	0	27	1	0	28	0	35	0	0	35	1	0	0	0	1	0	0	0	0	0	64
10:30 AM	0	24	1	0	25	1	20	0	0	21	0	0	1	4	1	0	0	0	1	0	47
10:45 AM	0	24	0	0	24	1	44	0	0	45	0	0	0	1	0	2	0	0	1	2	71
Hourly Total	0	101	2	0	103	2	126	0	0	128	1	0	2	5	3	2	0	1	2	3	237
11:00 AM	1	28	0	0	29	0	31	0	0	31	0	0	1	0	1	0	0	0	0	0	61
11:15 AM	0	39	0	0	39	0	22	0	0	22	2	0	0	0	2	0	0	0	0	0	63
11:30 AM	0	32	0	0	32	0	36	0	0	36	0	0	0	0	0	0	0	0	0	0	68
11:45 AM	0	53	0	0	53	0	35	0	0	35	0	0	0	0	0	0	0	2	1	2	90
Hourly Total	1	152	0	0	153	0	124	0	0	124	2	0	1	0	3	0	0	2	1	2	282

12:00 PM	1	37	1	0	39	0	44	0	0	44	0	0	0	1	0	1	0	1	1	2	85
12:15 PM	1	47	0	0	48	0	56	2	0	58	0	0	0	0	0	1	0	0	0	1	107
12:30 PM	0	28	1	0	29	0	40	0	0	40	0	0	1	2	1	2	0	0	4	2	72
12:45 PM	0	33	2	0	35	1	35	1	0	37	0	0	0	0	0	0	0	0	0	0	72
Hourly Total	2	145	4	0	151	1	175	3	0	179	0	0	1	3	1	4	0	1	5	5	336
1:00 PM	0	35	0	0	35	1	25	1	0	27	1	0	0	1	1	0	0	0	0	0	63
1:15 PM	1	35	0	0	36	1	38	1	0	40	0	0	1	0	1	1	0	1	0	2	79
1:30 PM	0	34	1	0	35	2	30	0	0	32	0	0	0	0	0	0	0	0	0	0	67
1:45 PM	0	46	1	0	47	0	32	0	0	32	0	0	1	1	1	0	0	0	0	0	80
Hourly Total	1	150	2	0	153	4	125	2	0	131	1	0	2	2	3	1	0	1	0	2	289
2:00 PM	0	44	0	0	44	2	39	0	1	41	2	0	0	1	2	0	0	0	0	0	87
2:15 PM	0	53	0	0	53	2	44	0	0	46	0	0	6	1	6	0	0	0	0	0	105
2:30 PM	1	61	0	0	62	0	39	0	0	39	2	0	1	4	3	0	0	0	0	0	104
2:45 PM	0	56	1	0	57	0	39	1	0	40	0	0	2	0	2	1	0	0	0	1	100
Hourly Total	1	214	1	0	216	4	161	1	1	166	4	0	9	6	13	1	0	0	0	1	396
3:00 PM	0	54	1	0	55	0	39	0	0	39	1	0	0	0	1	1	0	0	0	1	96
3:15 PM	0	47	0	0	47	1	36	1	0	38	0	0	1	2	1	0	0	1	0	1	87
3:30 PM	0	76	0	0	76	0	44	0	0	44	0	0	0	0	0	1	0	1	0	2	122
3:45 PM	0	52	0	0	52	0	39	0	0	39	0	0	0	0	0	0	0	0	0	0	91
Hourly Total	0	229	1	0	230	1	158	1	0	160	1	0	1	2	2	2	0	2	0	4	396
4:00 PM	0	77	1	0	78	2	51	0	0	53	0	0	3	1	3	1	0	0	0	1	135
4:15 PM	0	60	1	0	61	11	39	0	0	50	0	0	2	1	2	0	0	0	0	0	113
4:30 PM	0	70	0	0	70	4	46	0	0	50	2	0	2	0	4	2	0	0	0	2	126
4:45 PM	0	41	1	0	42	3	50	0	0	53	0	0	0	1	0	0	0	0	0	0	95
Hourly Total	0	248	3	0	251	20	186	0	0	206	2	0	7	3	9	3	0	0	0	3	469
5:00 PM	0	73	0	0	73	1	40	0	0	41	1	0	0	1	1	1	0	0	1	1	116
5:15 PM	0	81	0	0	81	2	46	2	0	50	0	0	1	2	1	1	0	0	5	1	133
5:30 PM	1	52	0	0	53	1	58	1	0	60	0	0	0	5	0	1	0	0	1	1	114
5:45 PM	3	49	0	1	52	0	55	7	0	62	0	0	0	2	0	1	0	2	0	3	117
Hourly Total	4	255	0	1	259	4	199	10	0	213	1	0	1	10	2	4	0	2	7	6	480
6:00 PM	0	85	0	0	85	0	19	1	0	20	0	0	0	0	0	1	0	6	0	7	112
6:15 PM	2	48	0	0	50	1	30	0	0	31	0	0	0	1	0	3	0	1	0	4	85
6:30 PM	0	20	0	0	20	0	21	0	0	21	0	0	0	0	0	0	0	0	1	0	41
6:45 PM	0	34	1	0	35	0	23	0	0	23	0	0	0	3	0	0	0	0	0	0	58
Hourly Total	2	187	1	0	190	1	93	1	0	95	0	0	0	4	0	4	0	7	1	11	296
7:00 PM	0	25	0	0	25	0	16	0	0	16	0	0	0	1	0	2	0	0	2	2	43
7:15 PM	0	21	0	0	21	0	19	0	0	19	0	0	0	1	0	0	0	0	0	0	40
7:30 PM	0	27	1	1	28	0	18	0	0	18	0	0	0	3	0	0	0	0	1	0	46
7:45 PM	0	25	0	0	25	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	48
Hourly Total	0	98	1	1	99	0	76	0	0	76	0	0	0	5	0	2	0	0	3	2	177
8:00 PM	0	25	0	0	25	0	17	1	0	18	0	0	0	2	0	1	0	0	2	1	44
8:15 PM	0	22	0	0	22	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	34
8:30 PM	0	17	0	0	17	0	12	1	0	13	0	0	0	0	0	0	0	0	0	0	30
8:45 PM	2	9	0	0	11	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	23
Hourly Total	2	73	0	0	75	0	53	2	0	55	0	0	0	2	0	1	0	0	2	1	131
9:00 PM	0	7	0	0	7	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	16
9:15 PM	0	11	0	0	11	1	14	0	0	15	0	0	0	0	0	0	0	1	0	1	27
9:30 PM	0	19	0	0	19	0	10	1	0	11	0	0	0	0	0	0	0	0	0	0	30
9:45 PM	0	13	0	0	13	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	20
Hourly Total	0	50	0	0	50	1	40	1	0	42	0	0	0	0	0	0	0	1	0	1	93
10:00 PM	1	5	0	0	6	0	6	0	0	6	0	0	0	0	0	1	0	1	0	2	14
10:15 PM	0	3	0	0	3	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	11
10:30 PM	0	9	0	0	9	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	11
10:45 PM	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	10
Hourly Total	1	22	0	0	23	0	21	0	0	21	0	0	0	0	0	1	0	1	0	2	46
11:00 PM	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	11
11:15 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
11:30 PM	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
11:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Hourly Total	0	13	0	0	13	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	23
Grand Total	21	2533	34	2	2588	67	2518	36	1	2621	19	0	43	50	62	40	0	30	22	70	5341
Approach %	0.8	97.9	1.3	-	-	2.6	96.1	1.4	-	-	30.6	0.0	69.4	-	-	57.1	0.0	42.9	-	-	-
Total %	0.4	47.4	0.6	-	48.5	1.3	47.1	0.7	-	49.1	0.4	0.0	0.8	-	1.2	0.7	0.0	0.6	-	1.3	-
Lights	21	2458	12	-	2491	22	2426	36	-	2484	10	0	20	-	30	40	0	30	-	70	5075
% Lights	100.0	97.0	35.3	-	96.3	32.8	96.3	100.0	-	94.8	52.6	-	46.5	-	48.4	100.0	-	100.0	-	100.0	95.0
Mediums	0	34	22	-	56	45	58	0	-	103	9	0	22	-	31	0	0	0	-	0	190
% Mediums	0.0	1.3	64.7	-	2.2	67.2	2.3	0.0	-	3.9	47.4	-	51.2	-	50.0	0.0	-	0.0	-	0.0	3.6
Articulated Trucks	0	41	0	-	41	0	34	0	-	34	0	0	1	-	1	0	0	0	-	0	76
% Articulated Trucks	0.0	1.6	0.0	-	1.6	0.0	1.4	0.0	-	1.3	0.0	-	2.3	-	1.6	0.0	-	0.0	-	0.0	1.4
Pedestrians	-	-	-	2	-	-	-	-	1	-	-	-	-	50	-	-	-	-	22	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
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Count Name: Main Ave at
Existing East Driveway
Site Code:
Start Date: 09/09/2025
Page No: 3

Turning Movement Peak Hour Data (6:45 AM)

Start Time	Main Ave Eastbound					Main Ave Westbound					Zeeland Schools Drwy Northbound					Existing East Driveway Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
6:45 AM	0	37	0	0	37	0	56	3	0	59	0	0	1	1	1	2	0	0	0	2	99
7:00 AM	0	31	1	0	32	0	77	0	0	77	0	0	0	0	0	0	0	0	0	0	109
7:15 AM	0	62	3	0	65	1	78	2	0	81	0	0	0	1	0	0	0	0	0	0	146
7:30 AM	0	35	0	0	35	2	45	1	0	48	1	0	3	0	4	1	0	0	0	1	88
Total	0	165	4	0	169	3	256	6	0	265	1	0	4	2	5	3	0	0	0	3	442
Approach %	0.0	97.6	2.4	-	-	1.1	96.6	2.3	-	-	20.0	0.0	80.0	-	-	100.0	0.0	0.0	-	-	-
Total %	0.0	37.3	0.9	-	38.2	0.7	57.9	1.4	-	60.0	0.2	0.0	0.9	-	1.1	0.7	0.0	0.0	-	0.7	-
PHF	0.000	0.665	0.333	-	0.650	0.375	0.821	0.500	-	0.818	0.250	0.000	0.333	-	0.313	0.375	0.000	0.000	-	0.375	0.757
Lights	0	163	2	-	165	0	245	6	-	251	0	0	0	-	0	3	0	0	-	3	419
% Lights	-	98.8	50.0	-	97.6	0.0	95.7	100.0	-	94.7	0.0	-	0.0	-	0.0	100.0	-	-	-	100.0	94.8
Mediums	0	2	2	-	4	3	8	0	-	11	1	0	4	-	5	0	0	0	-	0	20
% Mediums	-	1.2	50.0	-	2.4	100.0	3.1	0.0	-	4.2	100.0	-	100.0	-	100.0	0.0	-	-	-	0.0	4.5
Articulated Trucks	0	0	0	-	0	0	3	0	-	3	0	0	0	-	0	0	0	0	-	0	3
% Articulated Trucks	-	0.0	0.0	-	0.0	0.0	1.2	0.0	-	1.1	0.0	-	0.0	-	0.0	0.0	-	-	-	0.0	0.7
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Main Ave Eastbound					Main Ave Westbound					Zeeland Schools Drwy Northbound					Existing East Driveway Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 PM	0	73	0	0	73	1	40	0	0	41	1	0	0	1	1	1	0	0	1	1	116
5:15 PM	0	81	0	0	81	2	46	2	0	50	0	0	1	2	1	1	0	0	5	1	133
5:30 PM	1	52	0	0	53	1	58	1	0	60	0	0	0	5	0	1	0	0	1	1	114
5:45 PM	3	49	0	1	52	0	55	7	0	62	0	0	0	2	0	1	0	2	0	3	117
Total	4	255	0	1	259	4	199	10	0	213	1	0	1	10	2	4	0	2	7	6	480
Approach %	1.5	98.5	0.0	-	-	1.9	93.4	4.7	-	-	50.0	0.0	50.0	-	-	66.7	0.0	33.3	-	-	-
Total %	0.8	53.1	0.0	-	54.0	0.8	41.5	2.1	-	44.4	0.2	0.0	0.2	-	0.4	0.8	0.0	0.4	-	1.3	-
PHF	0.333	0.787	0.000	-	0.799	0.500	0.858	0.357	-	0.859	0.250	0.000	0.250	-	0.500	1.000	0.000	0.250	-	0.500	0.902
Lights	4	253	0	-	257	4	198	10	-	212	1	0	1	-	2	4	0	2	-	6	477
% Lights	100.0	99.2	-	-	99.2	100.0	99.5	100.0	-	99.5	100.0	-	100.0	-	100.0	100.0	-	100.0	-	100.0	99.4
Mediums	0	2	0	-	2	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	3
% Mediums	0.0	0.8	-	-	0.8	0.0	0.5	0.0	-	0.5	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	-	0.0	0.0
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	10	-	-	-	-	7	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
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Count Name: Main Ave at
Fairview Rd
Site Code:
Start Date: 09/09/2025
Page No: 1

Turning Movement Data

Start Time	Main Ave Eastbound					Main Ave Westbound					Fairview Rd Northbound					Fairview Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 AM	0	2	0	0	2	0	13	11	0	24	1	3	1	0	5	15	4	3	0	22	53
5:15 AM	1	3	0	0	4	0	5	33	0	38	3	12	2	0	17	15	2	10	0	27	86
5:30 AM	0	11	1	0	12	1	35	50	0	86	8	11	2	0	21	13	4	21	0	38	157
5:45 AM	4	16	1	0	21	1	42	54	0	97	8	33	4	0	45	20	4	19	0	43	206
Hourly Total	5	32	2	0	39	2	95	148	0	245	20	59	9	0	88	63	14	53	0	130	502
6:00 AM	22	29	10	0	61	3	13	51	0	67	6	18	3	0	27	50	10	7	2	67	222
6:15 AM	11	24	3	0	38	1	24	58	0	83	5	30	8	0	43	38	11	11	1	60	224
6:30 AM	8	23	4	0	35	1	20	50	0	71	3	17	16	0	36	51	14	15	0	80	222
6:45 AM	4	34	2	0	40	9	35	68	0	112	6	28	25	0	59	39	8	12	0	59	270
Hourly Total	45	110	19	0	174	14	92	227	0	333	20	93	52	0	165	178	43	45	3	266	938
7:00 AM	3	24	3	0	30	22	57	63	0	142	8	39	8	0	55	37	14	12	0	63	290
7:15 AM	13	48	4	0	65	10	64	83	0	157	4	56	18	0	78	56	8	8	0	72	372
7:30 AM	5	29	2	0	36	5	31	80	0	116	6	27	10	0	43	43	20	9	0	72	267
7:45 AM	6	32	1	0	39	4	40	91	0	135	3	17	12	0	32	56	12	8	1	76	282
Hourly Total	27	133	10	0	170	41	192	317	0	550	21	139	48	0	208	192	54	37	1	283	1211
8:00 AM	2	23	3	0	28	3	37	68	0	108	8	21	8	0	37	41	11	7	0	59	232
8:15 AM	5	28	0	0	33	7	41	61	0	109	3	16	13	0	32	59	6	9	0	74	248
8:30 AM	0	25	5	0	30	4	40	54	2	98	5	18	21	3	44	44	14	13	0	71	243
8:45 AM	0	38	2	0	40	8	45	44	0	97	8	17	7	0	32	34	9	6	0	49	218
Hourly Total	7	114	10	0	131	22	163	227	2	412	24	72	49	3	145	178	40	35	0	253	941
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	6	62	8	0	76	9	43	37	0	89	1	11	4	0	16	83	29	9	0	121	302
4:15 PM	7	54	4	0	65	4	36	50	0	90	1	22	12	0	35	72	15	11	0	98	288
4:30 PM	8	55	3	0	66	4	40	46	0	90	1	18	11	0	30	86	17	5	0	108	294
4:45 PM	5	38	4	0	47	7	36	54	0	97	3	25	12	0	40	61	15	11	0	87	271
Hourly Total	26	209	19	0	254	24	155	187	0	366	6	76	39	0	121	302	76	36	0	414	1155
5:00 PM	12	60	7	0	79	14	34	43	0	91	5	20	6	0	31	87	37	3	0	127	328
5:15 PM	14	59	5	0	78	9	31	71	1	111	8	24	3	1	35	80	28	11	0	119	343
5:30 PM	7	38	9	0	54	14	42	54	1	110	10	32	3	1	45	55	18	15	0	88	297
5:45 PM	5	39	4	0	48	7	36	63	0	106	12	16	5	0	33	49	33	20	0	102	289
Hourly Total	38	196	25	0	259	44	143	231	2	418	35	92	17	2	144	271	116	49	0	436	1257
6:00 PM	17	39	23	0	79	5	17	41	2	63	0	14	0	2	14	56	17	2	0	75	231
6:15 PM	8	33	16	0	57	5	23	24	0	52	1	11	1	0	13	24	24	6	0	54	176
6:30 PM	2	13	4	0	19	7	13	24	0	44	4	10	5	0	19	31	20	4	2	55	137
6:45 PM	4	26	2	0	32	4	20	26	0	50	2	14	4	0	20	25	9	3	0	37	139
Hourly Total	31	111	45	0	187	21	73	115	2	209	7	49	10	2	66	136	70	15	2	221	683
Grand Total	179	905	130	0	1214	168	913	1452	6	2533	133	580	224	7	937	1320	413	270	6	2003	6687
Approach %	14.7	74.5	10.7	-	-	6.6	36.0	57.3	-	-	14.2	61.9	23.9	-	-	65.9	20.6	13.5	-	-	-
Total %	2.7	13.5	1.9	-	18.2	2.5	13.7	21.7	-	37.9	2.0	8.7	3.3	-	14.0	19.7	6.2	4.0	-	30.0	-
Lights	159	873	127	-	1159	167	884	1299	-	2350	128	571	223	-	922	1162	405	230	-	1797	6228
% Lights	88.8	96.5	97.7	-	95.5	99.4	96.8	89.5	-	92.8	96.2	98.4	99.6	-	98.4	88.0	98.1	85.2	-	89.7	93.1
Mediums	20	19	3	-	42	1	19	53	-	73	5	6	1	-	12	68	8	40	-	116	243
% Mediums	11.2	2.1	2.3	-	3.5	0.6	2.1	3.7	-	2.9	3.8	1.0	0.4	-	1.3	5.2	1.9	14.8	-	5.8	3.6
Articulated Trucks	0	13	0	-	13	0	10	100	-	110	0	3	0	-	3	90	0	0	-	90	216
% Articulated Trucks	0.0	1.4	0.0	-	1.1	0.0	1.1	6.9	-	4.3	0.0	0.5	0.0	-	0.3	6.8	0.0	0.0	-	4.5	3.2
Pedestrians	-	-	-	0	-	-	-	-	6	-	-	-	-	7	-	-	-	-	6	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
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Count Name: Main Ave at
Fairview Rd
Site Code:
Start Date: 09/09/2025
Page No: 2

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Main Ave Eastbound					Main Ave Westbound					Fairview Rd Northbound					Fairview Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	3	24	3	0	30	22	57	63	0	142	8	39	8	0	55	37	14	12	0	63	290
7:15 AM	13	48	4	0	65	10	64	83	0	157	4	56	18	0	78	56	8	8	0	72	372
7:30 AM	5	29	2	0	36	5	31	80	0	116	6	27	10	0	43	43	20	9	0	72	267
7:45 AM	6	32	1	0	39	4	40	91	0	135	3	17	12	0	32	56	12	8	1	76	282
Total	27	133	10	0	170	41	192	317	0	550	21	139	48	0	208	192	54	37	1	283	1211
Approach %	15.9	78.2	5.9	-	-	7.5	34.9	57.6	-	-	10.1	66.8	23.1	-	-	67.8	19.1	13.1	-	-	-
Total %	2.2	11.0	0.8	-	14.0	3.4	15.9	26.2	-	45.4	1.7	11.5	4.0	-	17.2	15.9	4.5	3.1	-	23.4	-
PHF	0.519	0.693	0.625	-	0.654	0.466	0.750	0.871	-	0.876	0.656	0.621	0.667	-	0.667	0.857	0.675	0.771	-	0.931	0.814
Lights	22	124	10	-	156	41	187	270	-	498	21	139	48	-	208	162	52	31	-	245	1107
% Lights	81.5	93.2	100.0	-	91.8	100.0	97.4	85.2	-	90.5	100.0	100.0	100.0	-	100.0	84.4	96.3	83.8	-	86.6	91.4
Mediums	5	7	0	-	12	0	2	22	-	24	0	0	0	-	0	11	2	6	-	19	55
% Mediums	18.5	5.3	0.0	-	7.1	0.0	1.0	6.9	-	4.4	0.0	0.0	0.0	-	0.0	5.7	3.7	16.2	-	6.7	4.5
Articulated Trucks	0	2	0	-	2	0	3	25	-	28	0	0	0	-	0	19	0	0	-	19	49
% Articulated Trucks	0.0	1.5	0.0	-	1.2	0.0	1.6	7.9	-	5.1	0.0	0.0	0.0	-	0.0	9.9	0.0	0.0	-	6.7	4.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Main Ave Eastbound					Main Ave Westbound					Fairview Rd Northbound					Fairview Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 PM	12	60	7	0	79	14	34	43	0	91	5	20	6	0	31	87	37	3	0	127	328
5:15 PM	14	59	5	0	78	9	31	71	1	111	8	24	3	1	35	80	28	11	0	119	343
5:30 PM	7	38	9	0	54	14	42	54	1	110	10	32	3	1	45	55	18	15	0	88	297
5:45 PM	5	39	4	0	48	7	36	63	0	106	12	16	5	0	33	49	33	20	0	102	289
Total	38	196	25	0	259	44	143	231	2	418	35	92	17	2	144	271	116	49	0	436	1257
Approach %	14.7	75.7	9.7	-	-	10.5	34.2	55.3	-	-	24.3	63.9	11.8	-	-	62.2	26.6	11.2	-	-	-
Total %	3.0	15.6	2.0	-	20.6	3.5	11.4	18.4	-	33.3	2.8	7.3	1.4	-	11.5	21.6	9.2	3.9	-	34.7	-
PHF	0.679	0.817	0.694	-	0.820	0.786	0.851	0.813	-	0.941	0.729	0.719	0.708	-	0.800	0.779	0.784	0.613	-	0.858	0.916
Lights	37	194	25	-	256	44	143	219	-	406	34	92	17	-	143	257	116	47	-	420	1225
% Lights	97.4	99.0	100.0	-	98.8	100.0	100.0	94.8	-	97.1	97.1	100.0	100.0	-	99.3	94.8	100.0	95.9	-	96.3	97.5
Mediums	1	2	0	-	3	0	0	2	-	2	1	0	0	-	1	3	0	2	-	5	11
% Mediums	2.6	1.0	0.0	-	1.2	0.0	0.0	0.9	-	0.5	2.9	0.0	0.0	-	0.7	1.1	0.0	4.1	-	1.1	0.9
Articulated Trucks	0	0	0	-	0	0	0	10	-	10	0	0	0	-	0	11	0	0	-	11	21
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.0	4.3	-	2.4	0.0	0.0	0.0	-	0.0	4.1	0.0	0.0	-	2.5	1.7
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



LaCroix Traffic Engineering PLLC
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Count Name: Main Ave at
Chicago Dr
Site Code:
Start Date: 09/11/2025
Page No: 1

Turning Movement Data

Start Time	Main Ave Eastbound			Main Ave Westbound			Chicago Dr Southbound			Int. Total
	Left	Thru	App. Total	Thru	Right	App. Total	Left	Right	App. Total	
5:00 AM	2	16	18	29	8	37	36	6	42	97
5:15 AM	2	14	16	39	11	50	45	9	54	120
5:30 AM	3	23	26	64	19	83	63	8	71	180
5:45 AM	3	13	16	88	22	110	62	13	75	201
Hourly Total	10	66	76	220	60	280	206	36	242	598
6:00 AM	13	46	59	75	16	91	62	5	67	217
6:15 AM	9	63	72	80	31	111	78	18	96	279
6:30 AM	16	62	78	95	42	137	86	13	99	314
6:45 AM	20	57	77	152	64	216	82	21	103	396
Hourly Total	58	228	286	402	153	555	308	57	365	1206
7:00 AM	26	90	116	119	45	164	105	17	122	402
7:15 AM	16	89	105	120	50	170	108	15	123	398
7:30 AM	23	83	106	108	51	159	127	13	140	405
7:45 AM	20	61	81	135	87	222	141	23	164	467
Hourly Total	85	323	408	482	233	715	481	68	549	1672
8:00 AM	15	37	52	99	50	149	110	10	120	321
8:15 AM	16	64	80	106	53	159	90	23	113	352
8:30 AM	28	71	99	83	63	146	110	24	134	379
8:45 AM	15	48	63	84	40	124	103	19	122	309
Hourly Total	74	220	294	372	206	578	413	76	489	1361
*** BREAK ***	-	-	-	-	-	-	-	-	-	-
4:00 PM	18	152	170	72	80	152	99	18	117	439
4:15 PM	19	128	147	68	113	181	103	21	124	452
4:30 PM	19	129	148	83	117	200	92	18	110	458
4:45 PM	21	156	177	82	100	182	93	18	111	470
Hourly Total	77	565	642	305	410	715	387	75	462	1819
5:00 PM	26	148	174	76	103	179	92	24	116	469
5:15 PM	31	142	173	81	107	188	112	16	128	489
5:30 PM	23	107	130	76	88	164	87	23	110	404
5:45 PM	13	88	101	76	63	139	66	7	73	313
Hourly Total	93	485	578	309	361	670	357	70	427	1675
6:00 PM	18	85	103	51	57	108	84	11	95	306
6:15 PM	11	58	69	50	67	117	63	9	72	258
6:30 PM	12	66	78	42	44	86	56	10	66	230
6:45 PM	6	40	46	57	49	106	54	10	64	216
Hourly Total	47	249	296	200	217	417	257	40	297	1010
Grand Total	444	2136	2580	2290	1640	3930	2409	422	2831	9341
Approach %	17.2	82.8	-	58.3	41.7	-	85.1	14.9	-	-
Total %	4.8	22.9	27.6	24.5	17.6	42.1	25.8	4.5	30.3	-
Lights	419	1987	2406	2139	1573	3712	2210	413	2623	8741
% Lights	94.4	93.0	93.3	93.4	95.9	94.5	91.7	97.9	92.7	93.6
Mediums	8	59	67	58	29	87	92	7	99	253
% Mediums	1.8	2.8	2.6	2.5	1.8	2.2	3.8	1.7	3.5	2.7
Articulated Trucks	17	90	107	93	38	131	107	2	109	347
% Articulated Trucks	3.8	4.2	4.1	4.1	2.3	3.3	4.4	0.5	3.9	3.7



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Count Name: Main Ave at
Chicago Dr
Site Code:
Start Date: 09/11/2025
Page No: 2

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Main Ave Eastbound			Main Ave Westbound			Chicago Dr Southbound			Int. Total
	Left	Thru	App. Total	Thru	Right	App. Total	Left	Right	App. Total	
7:00 AM	26	90	116	119	45	164	105	17	122	402
7:15 AM	16	89	105	120	50	170	108	15	123	398
7:30 AM	23	83	106	108	51	159	127	13	140	405
7:45 AM	20	61	81	135	87	222	141	23	164	467
Total	85	323	408	482	233	715	481	68	549	1672
Approach %	20.8	79.2	-	67.4	32.6	-	87.6	12.4	-	-
Total %	5.1	19.3	24.4	28.8	13.9	42.8	28.8	4.1	32.8	-
PHF	0.817	0.897	0.879	0.893	0.670	0.805	0.853	0.739	0.837	0.895
Lights	78	295	373	443	220	663	440	65	505	1541
% Lights	91.8	91.3	91.4	91.9	94.4	92.7	91.5	95.6	92.0	92.2
Mediums	3	18	21	19	6	25	20	3	23	69
% Mediums	3.5	5.6	5.1	3.9	2.6	3.5	4.2	4.4	4.2	4.1
Articulated Trucks	4	10	14	20	7	27	21	0	21	62
% Articulated Trucks	4.7	3.1	3.4	4.1	3.0	3.8	4.4	0.0	3.8	3.7

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Main Ave Eastbound			Main Ave Westbound			Chicago Dr Southbound			Int. Total
	Left	Thru	App. Total	Thru	Right	App. Total	Left	Right	App. Total	
4:30 PM	19	129	148	83	117	200	92	18	110	458
4:45 PM	21	156	177	82	100	182	93	18	111	470
5:00 PM	26	148	174	76	103	179	92	24	116	469
5:15 PM	31	142	173	81	107	188	112	16	128	489
Total	97	575	672	322	427	749	389	76	465	1886
Approach %	14.4	85.6	-	43.0	57.0	-	83.7	16.3	-	-
Total %	5.1	30.5	35.6	17.1	22.6	39.7	20.6	4.0	24.7	-
PHF	0.782	0.921	0.949	0.970	0.912	0.936	0.868	0.792	0.908	0.964
Lights	94	558	652	302	412	714	367	75	442	1808
% Lights	96.9	97.0	97.0	93.8	96.5	95.3	94.3	98.7	95.1	95.9
Mediums	0	4	4	9	7	16	9	1	10	30
% Mediums	0.0	0.7	0.6	2.8	1.6	2.1	2.3	1.3	2.2	1.6
Articulated Trucks	3	13	16	11	8	19	13	0	13	48
% Articulated Trucks	3.1	2.3	2.4	3.4	1.9	2.5	3.3	0.0	2.8	2.5



LaCroix Traffic Engineering PLLC
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Count Name: Fairview Rd at
Existing Site Driveway
Site Code:
Start Date: 09/09/2025
Page No: 1

Turning Movement Data

Start Time	Existing Site Driveway			Fairview Rd			Fairview Rd			Int. Total
	Eastbound		App. Total	Northbound		App. Total	Southbound			
	Left	Right			Left		Thru		Thru	Right
12:00 AM	1	0	1	0	8	8	7	1	8	17
12:15 AM	0	0	0	0	3	3	4	0	4	7
12:30 AM	0	0	0	0	4	4	12	0	12	16
12:45 AM	0	0	0	0	6	6	4	0	4	10
Hourly Total	1	0	1	0	21	21	27	1	28	50
1:00 AM	1	0	1	1	0	1	3	0	3	5
1:15 AM	0	0	0	0	5	5	2	0	2	7
1:30 AM	0	0	0	0	2	2	1	0	1	3
1:45 AM	0	0	0	0	8	8	2	1	3	11
Hourly Total	1	0	1	1	15	16	8	1	9	26
2:00 AM	1	0	1	0	4	4	4	0	4	9
2:15 AM	0	0	0	0	6	6	4	0	4	10
2:30 AM	0	0	0	0	3	3	9	1	10	13
2:45 AM	1	0	1	0	2	2	2	0	2	5
Hourly Total	2	0	2	0	15	15	19	1	20	37
3:00 AM	0	0	0	0	4	4	4	1	5	9
3:15 AM	0	0	0	0	10	10	2	0	2	12
3:30 AM	0	0	0	0	4	4	2	0	2	6
3:45 AM	0	0	0	0	16	16	5	0	5	21
Hourly Total	0	0	0	0	34	34	13	1	14	48
4:00 AM	0	0	0	0	16	16	7	0	7	23
4:15 AM	0	0	0	0	18	18	6	0	6	24
4:30 AM	0	0	0	0	10	10	14	1	15	25
4:45 AM	0	1	1	1	27	28	8	0	8	37
Hourly Total	0	1	1	1	71	72	35	1	36	109
5:00 AM	0	1	1	0	14	14	20	0	20	35
5:15 AM	1	0	1	2	42	44	29	0	29	74
5:30 AM	0	3	3	3	60	63	35	0	35	101
5:45 AM	1	0	1	1	91	92	45	6	51	144
Hourly Total	2	4	6	6	207	213	129	6	135	354
6:00 AM	0	3	3	3	88	91	65	5	70	164
6:15 AM	4	4	8	2	96	98	54	2	56	162
6:30 AM	1	4	5	6	74	80	77	2	79	164
6:45 AM	0	5	5	7	99	106	57	3	60	171
Hourly Total	5	16	21	18	357	375	253	12	265	661
7:00 AM	0	1	1	2	111	113	67	1	68	182
7:15 AM	1	1	2	3	146	149	72	0	72	223
7:30 AM	0	4	4	6	109	115	74	1	75	194
7:45 AM	2	3	5	1	116	117	78	0	78	200
Hourly Total	3	9	12	12	482	494	291	2	293	799
8:00 AM	1	3	4	0	97	97	60	1	61	162
8:15 AM	0	1	1	3	82	85	75	0	75	161
8:30 AM	1	1	2	4	72	76	69	2	71	149
8:45 AM	1	3	4	1	65	66	53	1	54	124
Hourly Total	3	8	11	8	316	324	257	4	261	596
9:00 AM	0	3	3	2	52	54	50	1	51	108
9:15 AM	0	1	1	5	48	53	40	0	40	94
9:30 AM	1	3	4	3	53	56	42	0	42	102
9:45 AM	0	3	3	5	43	48	33	1	34	85
Hourly Total	1	10	11	15	196	211	165	2	167	389
10:00 AM	1	2	3	2	41	43	51	2	53	99
10:15 AM	3	2	5	1	31	32	41	3	44	81
10:30 AM	0	1	1	0	30	30	43	0	43	74
10:45 AM	2	2	4	3	36	39	43	2	45	88
Hourly Total	6	7	13	6	138	144	178	7	185	342
11:00 AM	0	1	1	2	35	37	45	0	45	83
11:15 AM	1	1	2	2	50	52	51	1	52	106
11:30 AM	2	3	5	2	42	44	70	0	70	119
11:45 AM	1	1	2	1	50	51	66	1	67	120
Hourly Total	4	6	10	7	177	184	232	2	234	428
12:00 PM	2	2	4	1	52	53	68	1	69	126

12:15 PM	1	0	1	4	58	62	57	0	57	120
12:30 PM	2	2	4	4	46	50	60	1	61	115
12:45 PM	0	0	0	2	64	66	40	1	41	107
Hourly Total	5	4	9	11	220	231	225	3	228	468
1:00 PM	1	0	1	0	64	64	46	2	48	113
1:15 PM	3	0	3	1	58	59	62	0	62	124
1:30 PM	1	1	2	0	60	60	58	1	59	121
1:45 PM	1	1	2	2	64	66	61	3	64	132
Hourly Total	6	2	8	3	246	249	227	6	233	490
2:00 PM	2	1	3	2	59	61	106	0	106	170
2:15 PM	1	3	4	1	83	84	93	0	93	181
2:30 PM	1	1	2	1	65	66	100	0	100	168
2:45 PM	0	2	2	4	59	63	109	1	110	175
Hourly Total	4	7	11	8	266	274	408	1	409	694
3:00 PM	0	4	4	2	61	63	126	0	126	193
3:15 PM	1	6	7	0	65	65	86	1	87	159
3:30 PM	2	3	5	2	87	89	96	0	96	190
3:45 PM	0	1	1	1	62	63	84	1	85	149
Hourly Total	3	14	17	5	275	280	392	2	394	691
4:00 PM	1	7	8	2	56	58	111	1	112	178
4:15 PM	1	0	1	1	75	76	106	1	107	184
4:30 PM	0	1	1	1	74	75	108	0	108	184
4:45 PM	0	1	1	0	84	84	103	1	104	189
Hourly Total	2	9	11	4	289	293	428	3	431	735
5:00 PM	2	1	3	3	80	83	126	1	127	213
5:15 PM	2	9	11	6	106	112	111	1	112	235
5:30 PM	1	0	1	0	94	94	88	0	88	183
5:45 PM	1	1	2	1	85	86	107	1	108	196
Hourly Total	6	11	17	10	365	375	432	3	435	827
6:00 PM	3	3	6	5	49	54	72	2	74	134
6:15 PM	1	4	5	3	42	45	48	0	48	98
6:30 PM	1	4	5	0	32	32	53	1	54	91
6:45 PM	1	0	1	0	39	39	36	0	36	76
Hourly Total	6	11	17	8	162	170	209	3	212	399
7:00 PM	0	0	0	0	39	39	28	1	29	68
7:15 PM	0	0	0	0	40	40	44	1	45	85
7:30 PM	1	1	2	0	46	46	53	0	53	101
7:45 PM	0	0	0	0	36	36	36	0	36	72
Hourly Total	1	1	2	0	161	161	161	2	163	326
8:00 PM	0	0	0	0	30	30	34	0	34	64
8:15 PM	0	0	0	0	44	44	23	0	23	67
8:30 PM	0	1	1	0	25	25	24	0	24	50
8:45 PM	0	2	2	0	36	36	19	0	19	57
Hourly Total	0	3	3	0	135	135	100	0	100	238
9:00 PM	0	0	0	0	24	24	65	0	65	89
9:15 PM	0	0	0	0	36	36	31	1	32	68
9:30 PM	1	0	1	0	38	38	21	0	21	60
9:45 PM	0	0	0	0	35	35	15	1	16	51
Hourly Total	1	0	1	0	133	133	132	2	134	268
10:00 PM	1	0	1	0	22	22	43	0	43	66
10:15 PM	0	0	0	0	19	19	22	1	23	42
10:30 PM	1	0	1	0	9	9	30	0	30	40
10:45 PM	0	0	0	0	20	20	10	0	10	30
Hourly Total	2	0	2	0	70	70	105	1	106	178
11:00 PM	0	1	1	1	7	8	22	0	22	31
11:15 PM	0	0	0	0	11	11	16	1	17	28
11:30 PM	0	0	0	0	3	3	11	0	11	14
11:45 PM	1	0	1	0	2	2	8	0	8	11
Hourly Total	1	1	2	1	23	24	57	1	58	84
Grand Total	65	124	189	124	4374	4498	4483	67	4550	9237
Approach %	34.4	65.6	-	2.8	97.2	-	98.5	1.5	-	-
Total %	0.7	1.3	2.0	1.3	47.4	48.7	48.5	0.7	49.3	-
Lights	32	105	137	103	3897	4000	3968	38	4006	8143
% Lights	49.2	84.7	72.5	83.1	89.1	88.9	88.5	56.7	88.0	88.2
Mediums	14	9	23	8	195	203	238	13	251	477
% Mediums	21.5	7.3	12.2	6.5	4.5	4.5	5.3	19.4	5.5	5.2
Articulated Trucks	19	10	29	13	282	295	277	16	293	617
% Articulated Trucks	29.2	8.1	15.3	10.5	6.4	6.6	6.2	23.9	6.4	6.7



LaCroix Traffic Engineering PLLC
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Count Name: Fairview Rd at
Existing Site Driveway
Site Code:
Start Date: 09/09/2025
Page No: 3

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Existing Site Driveway Eastbound			Fairview Rd Northbound			Fairview Rd Southbound			Int. Total
	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	
7:00 AM	0	1	1	2	111	113	67	1	68	182
7:15 AM	1	1	2	3	146	149	72	0	72	223
7:30 AM	0	4	4	6	109	115	74	1	75	194
7:45 AM	2	3	5	1	116	117	78	0	78	200
Total	3	9	12	12	482	494	291	2	293	799
Approach %	25.0	75.0	-	2.4	97.6	-	99.3	0.7	-	-
Total %	0.4	1.1	1.5	1.5	60.3	61.8	36.4	0.3	36.7	-
PHF	0.375	0.563	0.600	0.500	0.825	0.829	0.933	0.500	0.939	0.896
Lights	0	7	7	8	433	441	254	1	255	703
% Lights	0.0	77.8	58.3	66.7	89.8	89.3	87.3	50.0	87.0	88.0
Mediums	1	1	2	1	26	27	20	1	21	50
% Mediums	33.3	11.1	16.7	8.3	5.4	5.5	6.9	50.0	7.2	6.3
Articulated Trucks	2	1	3	3	23	26	17	0	17	46
% Articulated Trucks	66.7	11.1	25.0	25.0	4.8	5.3	5.8	0.0	5.8	5.8

Turning Movement Peak Hour Data (5:00 PM)

Start Time	Existing Site Driveway Eastbound			Fairview Rd Northbound			Fairview Rd Southbound			Int. Total
	Left	Right	App. Total	Left	Thru	App. Total	Thru	Right	App. Total	
5:00 PM	2	1	3	3	80	83	126	1	127	213
5:15 PM	2	9	11	6	106	112	111	1	112	235
5:30 PM	1	0	1	0	94	94	88	0	88	183
5:45 PM	1	1	2	1	85	86	107	1	108	196
Total	6	11	17	10	365	375	432	3	435	827
Approach %	35.3	64.7	-	2.7	97.3	-	99.3	0.7	-	-
Total %	0.7	1.3	2.1	1.2	44.1	45.3	52.2	0.4	52.6	-
PHF	0.750	0.306	0.386	0.417	0.861	0.837	0.857	0.750	0.856	0.880
Lights	5	10	15	10	352	362	416	2	418	795
% Lights	83.3	90.9	88.2	100.0	96.4	96.5	96.3	66.7	96.1	96.1
Mediums	0	0	0	0	5	5	6	1	7	12
% Mediums	0.0	0.0	0.0	0.0	1.4	1.3	1.4	33.3	1.6	1.5
Articulated Trucks	1	1	2	0	8	8	10	0	10	20
% Articulated Trucks	16.7	9.1	11.8	0.0	2.2	2.1	2.3	0.0	2.3	2.4



LaCroix Traffic Engineering PLLC
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Count Name: Washington Ave at
Carlton St
Site Code:
Start Date: 09/11/2025
Page No: 1

Turning Movement Data

Start Time	Washington Ave Eastbound					Washington Ave Westbound					Carlton St Northbound					Southbound Approach Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 AM	0	3	0	0	3	0	7	0	0	7	2	0	0	0	2	0	0	0	0	0	12
5:15 AM	0	7	1	0	8	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	15
5:30 AM	0	19	6	0	25	1	8	0	1	9	3	0	0	0	3	0	0	0	0	0	37
5:45 AM	0	22	6	0	28	3	18	0	0	21	9	0	1	0	10	0	0	0	0	0	59
Hourly Total	0	51	13	0	64	4	40	0	1	44	14	0	1	0	15	0	0	0	0	0	123
6:00 AM	0	14	6	0	20	2	15	0	0	17	17	0	0	0	17	0	0	0	0	0	54
6:15 AM	0	21	4	0	25	0	19	0	0	19	10	0	3	0	13	0	0	0	0	0	57
6:30 AM	0	30	8	0	38	1	32	0	0	33	12	0	2	0	14	0	0	0	0	0	85
6:45 AM	0	62	9	0	71	2	32	0	0	34	15	0	0	0	15	0	0	0	0	0	120
Hourly Total	0	127	27	0	154	5	98	0	0	103	54	0	5	0	59	0	0	0	0	0	316
7:00 AM	0	25	15	0	40	1	61	0	0	62	36	0	2	0	38	0	0	0	0	0	140
7:15 AM	0	56	21	0	77	1	47	0	0	48	63	0	6	0	69	0	0	0	0	0	194
7:30 AM	0	40	11	0	51	0	47	0	0	47	17	0	1	0	18	0	0	0	0	0	116
7:45 AM	0	37	6	0	43	3	75	0	0	78	18	0	1	0	19	0	0	0	0	0	140
Hourly Total	0	158	53	0	211	5	230	0	0	235	134	0	10	0	144	0	0	0	0	0	590
8:00 AM	0	27	8	0	35	1	43	0	0	44	8	0	1	0	9	1	0	0	0	1	89
8:15 AM	0	39	6	0	45	0	47	0	0	47	11	0	2	0	13	0	0	0	0	0	105
8:30 AM	0	35	10	0	45	1	51	0	0	52	11	0	1	0	12	0	0	0	0	0	109
8:45 AM	0	28	6	0	34	1	40	0	0	41	6	0	5	0	11	0	0	0	2	0	86
Hourly Total	0	129	30	0	159	3	181	0	0	184	36	0	9	0	45	1	0	0	2	1	389
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	62	14	0	76	3	55	0	0	58	11	0	0	0	11	0	0	0	0	0	145
4:15 PM	0	52	15	0	67	0	60	0	0	60	7	0	1	0	8	0	0	0	0	0	135
4:30 PM	0	59	29	0	88	2	35	0	0	37	12	0	2	0	14	0	0	0	0	0	139
4:45 PM	0	58	18	0	76	2	32	0	0	34	14	0	4	0	18	0	0	0	0	0	128
Hourly Total	0	231	76	0	307	7	182	0	0	189	44	0	7	0	51	0	0	0	0	0	547
5:00 PM	0	61	19	0	80	4	54	0	0	58	16	0	1	0	17	0	0	0	0	0	155
5:15 PM	0	58	18	0	76	0	47	0	0	47	16	0	1	0	17	0	0	0	0	0	140
5:30 PM	0	37	13	0	50	1	32	0	0	33	10	0	1	1	11	0	0	0	0	0	94
5:45 PM	0	36	9	0	45	0	35	0	0	35	9	0	1	0	10	0	0	0	0	0	90
Hourly Total	0	192	59	0	251	5	168	0	0	173	51	0	4	1	55	0	0	0	0	0	479
6:00 PM	0	25	16	0	41	2	29	0	0	31	14	0	2	0	16	0	0	0	0	0	88
6:15 PM	0	15	10	0	25	0	22	0	0	22	10	0	1	0	11	0	0	0	0	0	58
6:30 PM	0	23	5	0	28	1	12	0	0	13	9	0	0	0	9	0	0	0	0	0	50
6:45 PM	0	28	5	0	33	0	16	0	0	16	7	0	0	0	7	0	0	0	0	0	56
Hourly Total	0	91	36	0	127	3	79	0	0	82	40	0	3	0	43	0	0	0	0	0	252
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	979	294	0	1273	32	978	0	1	1010	373	0	39	1	412	1	0	0	2	1	2696
Approach %	0.0	76.9	23.1	-	-	3.2	96.8	0.0	-	-	90.5	0.0	9.5	-	-	100.0	0.0	0.0	-	-	-
Total %	0.0	36.3	10.9	-	47.2	1.2	36.3	0.0	-	37.5	13.8	0.0	1.4	-	15.3	0.0	0.0	0.0	-	0.0	-
Lights	0	943	282	-	1225	31	941	0	-	972	368	0	39	-	407	0	0	0	-	0	2604
% Lights	-	96.3	95.9	-	96.2	96.9	96.2	-	-	96.2	98.7	-	100.0	-	98.8	0.0	-	-	-	0.0	96.6
Mediums	0	21	11	-	32	1	21	0	-	22	5	0	0	-	5	0	0	0	-	0	59
% Mediums	-	2.1	3.7	-	2.5	3.1	2.1	-	-	2.2	1.3	-	0.0	-	1.2	0.0	-	-	-	0.0	2.2
Articulated Trucks	0	15	1	-	16	0	16	0	-	16	0	0	0	-	0	1	0	0	-	1	33
% Articulated Trucks	-	1.5	0.3	-	1.3	0.0	1.6	-	-	1.6	0.0	-	0.0	-	0.0	100.0	-	-	-	100.0	1.2
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-	-	-	2	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
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Count Name: Washington Ave at
Carlton St
Site Code:
Start Date: 09/11/2025
Page No: 2

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Washington Ave Eastbound					Washington Ave Westbound					Carlton St Northbound					Southbound Approach Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	0	25	15	0	40	1	61	0	0	62	36	0	2	0	38	0	0	0	0	0	140
7:15 AM	0	56	21	0	77	1	47	0	0	48	63	0	6	0	69	0	0	0	0	0	194
7:30 AM	0	40	11	0	51	0	47	0	0	47	17	0	1	0	18	0	0	0	0	0	116
7:45 AM	0	37	6	0	43	3	75	0	0	78	18	0	1	0	19	0	0	0	0	0	140
Total	0	158	53	0	211	5	230	0	0	235	134	0	10	0	144	0	0	0	0	0	590
Approach %	0.0	74.9	25.1	-	-	2.1	97.9	0.0	-	-	93.1	0.0	6.9	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	26.8	9.0	-	35.8	0.8	39.0	0.0	-	39.8	22.7	0.0	1.7	-	24.4	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.705	0.631	-	0.685	0.417	0.767	0.000	-	0.753	0.532	0.000	0.417	-	0.522	0.000	0.000	0.000	-	0.000	0.760
Lights	0	155	50	-	205	4	219	0	-	223	132	0	10	-	142	0	0	0	-	0	570
% Lights	-	98.1	94.3	-	97.2	80.0	95.2	-	-	94.9	98.5	-	100.0	-	98.6	-	-	-	-	-	96.6
Mediums	0	2	3	-	5	1	6	0	-	7	2	0	0	-	2	0	0	0	-	0	14
% Mediums	-	1.3	5.7	-	2.4	20.0	2.6	-	-	3.0	1.5	-	0.0	-	1.4	-	-	-	-	-	2.4
Articulated Trucks	0	1	0	-	1	0	5	0	-	5	0	0	0	-	0	0	0	0	-	0	6
% Articulated Trucks	-	0.6	0.0	-	0.5	0.0	2.2	-	-	2.1	0.0	-	0.0	-	0.0	-	-	-	-	-	1.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Washington Ave Eastbound					Washington Ave Westbound					Carlton St Northbound					Southbound Approach Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
4:30 PM	0	59	29	0	88	2	35	0	0	37	12	0	2	0	14	0	0	0	0	0	139
4:45 PM	0	58	18	0	76	2	32	0	0	34	14	0	4	0	18	0	0	0	0	0	128
5:00 PM	0	61	19	0	80	4	54	0	0	58	16	0	1	0	17	0	0	0	0	0	155
5:15 PM	0	58	18	0	76	0	47	0	0	47	16	0	1	0	17	0	0	0	0	0	140
Total	0	236	84	0	320	8	168	0	0	176	58	0	8	0	66	0	0	0	0	0	562
Approach %	0.0	73.8	26.3	-	-	4.5	95.5	0.0	-	-	87.9	0.0	12.1	-	-	0.0	0.0	0.0	-	-	-
Total %	0.0	42.0	14.9	-	56.9	1.4	29.9	0.0	-	31.3	10.3	0.0	1.4	-	11.7	0.0	0.0	0.0	-	0.0	-
PHF	0.000	0.967	0.724	-	0.909	0.500	0.778	0.000	-	0.759	0.906	0.000	0.500	-	0.917	0.000	0.000	0.000	-	0.000	0.906
Lights	0	228	82	-	310	8	166	0	-	174	56	0	8	-	64	0	0	0	-	0	548
% Lights	-	96.6	97.6	-	96.9	100.0	98.8	-	-	98.9	96.6	-	100.0	-	97.0	-	-	-	-	-	97.5
Mediums	0	4	2	-	6	0	0	0	-	0	2	0	0	-	2	0	0	0	-	0	8
% Mediums	-	1.7	2.4	-	1.9	0.0	0.0	-	-	0.0	3.4	-	0.0	-	3.0	-	-	-	-	-	1.4
Articulated Trucks	0	4	0	-	4	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	6
% Articulated Trucks	-	1.7	0.0	-	1.3	0.0	1.2	-	-	1.1	0.0	-	0.0	-	0.0	-	-	-	-	-	1.1
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
Grand Rapids, Michigan, United States 49525
6162061902 nick@lacroixtraffic.com

Count Name: Washington Ave at
Fairview Rd
Site Code:
Start Date: 09/11/2025
Page No: 1

Turning Movement Data

Start Time	Washington Ave Eastbound					Washington Ave Westbound					Fairview Rd Northbound					Fairview Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
5:00 AM	0	3	0	0	3	0	3	7	0	10	4	20	0	0	24	2	16	1	0	19	56
5:15 AM	1	4	0	0	5	0	3	7	0	10	3	33	0	0	36	0	33	4	0	37	88
5:30 AM	3	6	1	0	10	0	7	4	0	11	1	59	1	0	61	4	44	1	0	49	131
5:45 AM	6	8	5	0	19	0	12	17	0	29	1	78	1	0	80	4	40	5	0	49	177
Hourly Total	10	21	6	0	37	0	25	35	0	60	9	190	2	0	201	10	133	11	0	154	452
6:00 AM	6	5	1	0	12	2	7	10	0	19	3	80	1	0	84	6	67	10	0	83	198
6:15 AM	1	8	11	0	20	0	18	15	0	33	4	70	0	1	74	10	62	6	0	78	205
6:30 AM	3	15	12	0	30	2	24	5	0	31	0	79	2	0	81	18	91	8	0	117	259
6:45 AM	9	48	7	0	64	2	22	13	0	37	5	110	1	0	116	23	64	8	0	95	312
Hourly Total	19	76	31	0	126	6	71	43	0	120	12	339	4	1	355	57	284	32	0	373	974
7:00 AM	3	18	9	0	30	3	41	28	0	72	13	109	0	1	122	8	55	12	0	75	299
7:15 AM	18	25	12	0	55	2	24	19	0	45	4	113	0	0	117	7	67	9	0	83	300
7:30 AM	15	29	3	0	47	3	33	24	0	60	8	113	4	0	125	21	103	11	0	135	367
7:45 AM	9	17	9	0	35	3	60	20	0	83	5	109	1	1	115	12	67	13	0	92	325
Hourly Total	45	89	33	0	167	11	158	91	0	260	30	444	5	2	479	48	292	45	0	385	1291
8:00 AM	7	13	7	0	27	0	36	16	0	52	4	80	2	0	86	18	57	12	0	87	252
8:15 AM	6	23	9	0	38	2	37	13	0	52	4	61	0	0	65	12	52	10	0	74	229
8:30 AM	4	24	12	0	40	0	41	12	0	53	6	70	1	0	77	7	63	9	0	79	249
8:45 AM	10	16	9	0	35	1	25	6	0	32	10	68	2	0	80	9	40	9	0	58	205
Hourly Total	27	76	37	0	140	3	139	47	0	189	24	279	5	0	308	46	212	40	0	298	935
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	17	38	8	0	63	3	32	11	1	46	13	72	3	0	88	18	107	12	0	137	334
4:15 PM	16	41	9	0	66	0	43	16	0	59	9	82	2	0	93	12	109	8	0	129	347
4:30 PM	11	35	12	0	58	3	25	15	0	43	8	85	1	0	94	19	90	5	0	114	309
4:45 PM	10	39	8	0	57	2	23	13	0	38	5	100	1	0	106	16	108	7	0	131	332
Hourly Total	54	153	37	0	244	8	123	55	1	186	35	339	7	0	381	65	414	32	0	511	1322
5:00 PM	24	36	11	0	71	6	35	5	0	46	7	105	1	0	113	8	117	10	0	135	365
5:15 PM	17	41	5	0	63	0	29	11	0	40	8	90	0	0	98	14	99	13	0	126	327
5:30 PM	7	22	5	0	34	0	21	7	0	28	1	79	1	0	81	13	104	5	0	122	265
5:45 PM	11	22	5	0	38	1	32	3	0	36	1	69	0	0	70	4	80	4	0	88	232
Hourly Total	59	121	26	0	206	7	117	26	0	150	17	343	2	0	362	39	400	32	0	471	1189
6:00 PM	10	15	4	0	29	1	19	8	0	28	6	62	0	0	68	3	58	4	0	65	190
6:15 PM	1	10	4	0	15	0	14	1	0	15	4	44	0	0	48	5	41	5	0	51	129
6:30 PM	4	14	4	1	22	1	6	4	0	11	2	57	1	0	60	2	39	7	0	48	141
6:45 PM	2	19	5	1	26	0	13	9	0	22	2	54	0	0	56	3	21	3	0	27	131
Hourly Total	17	58	17	2	92	2	52	22	0	76	14	217	1	0	232	13	159	19	0	191	591
Grand Total	231	594	187	2	1012	37	685	319	1	1041	141	2151	26	3	2318	278	1894	211	0	2383	6754
Approach %	22.8	58.7	18.5	-	-	3.6	65.8	30.6	-	-	6.1	92.8	1.1	-	-	11.7	79.5	8.9	-	-	-
Total %	3.4	8.8	2.8	-	15.0	0.5	10.1	4.7	-	15.4	2.1	31.8	0.4	-	34.3	4.1	28.0	3.1	-	35.3	-
Lights	215	586	161	-	962	31	671	293	-	995	113	1991	23	-	2127	269	1742	171	-	2182	6266
% Lights	93.1	98.7	86.1	-	95.1	83.8	98.0	91.8	-	95.6	80.1	92.6	88.5	-	91.8	96.8	92.0	81.0	-	91.6	92.8
Mediums	8	8	13	-	29	0	10	10	-	20	18	85	1	-	104	3	78	34	-	115	268
% Mediums	3.5	1.3	7.0	-	2.9	0.0	1.5	3.1	-	1.9	12.8	4.0	3.8	-	4.5	1.1	4.1	16.1	-	4.8	4.0
Articulated Trucks	8	0	13	-	21	6	4	16	-	26	10	75	2	-	87	6	74	6	-	86	220
% Articulated Trucks	3.5	0.0	7.0	-	2.1	16.2	0.6	5.0	-	2.5	7.1	3.5	7.7	-	3.8	2.2	3.9	2.8	-	3.6	3.3
Pedestrians	-	-	-	2	-	-	-	-	1	-	-	-	-	3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-



LaCroix Traffic Engineering PLLC
3455 Williamson Avenue Northeast
Grand Rapids, Michigan, United States 49525
6162061902 nick@lacroixtraffic.com

Count Name: Washington Ave at
Fairview Rd
Site Code:
Start Date: 09/11/2025
Page No: 2

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Washington Ave Eastbound					Washington Ave Westbound					Fairview Rd Northbound					Fairview Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	3	18	9	0	30	3	41	28	0	72	13	109	0	1	122	8	55	12	0	75	299
7:15 AM	18	25	12	0	55	2	24	19	0	45	4	113	0	0	117	7	67	9	0	83	300
7:30 AM	15	29	3	0	47	3	33	24	0	60	8	113	4	0	125	21	103	11	0	135	367
7:45 AM	9	17	9	0	35	3	60	20	0	83	5	109	1	1	115	12	67	13	0	92	325
Total	45	89	33	0	167	11	158	91	0	260	30	444	5	2	479	48	292	45	0	385	1291
Approach %	26.9	53.3	19.8	-	-	4.2	60.8	35.0	-	-	6.3	92.7	1.0	-	-	12.5	75.8	11.7	-	-	-
Total %	3.5	6.9	2.6	-	12.9	0.9	12.2	7.0	-	20.1	2.3	34.4	0.4	-	37.1	3.7	22.6	3.5	-	29.8	-
PHF	0.625	0.767	0.688	-	0.759	0.917	0.658	0.813	-	0.783	0.577	0.982	0.313	-	0.958	0.571	0.709	0.865	-	0.713	0.879
Lights	45	88	31	-	164	11	154	82	-	247	24	405	5	-	434	47	265	38	-	350	1195
% Lights	100.0	98.9	93.9	-	98.2	100.0	97.5	90.1	-	95.0	80.0	91.2	100.0	-	90.6	97.9	90.8	84.4	-	90.9	92.6
Mediums	0	1	1	-	2	0	3	5	-	8	5	18	0	-	23	1	14	5	-	20	53
% Mediums	0.0	1.1	3.0	-	1.2	0.0	1.9	5.5	-	3.1	16.7	4.1	0.0	-	4.8	2.1	4.8	11.1	-	5.2	4.1
Articulated Trucks	0	0	1	-	1	0	1	4	-	5	1	21	0	-	22	0	13	2	-	15	43
% Articulated Trucks	0.0	0.0	3.0	-	0.6	0.0	0.6	4.4	-	1.9	3.3	4.7	0.0	-	4.6	0.0	4.5	4.4	-	3.9	3.3
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Washington Ave Eastbound					Washington Ave Westbound					Fairview Rd Northbound					Fairview Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
4:15 PM	16	41	9	0	66	0	43	16	0	59	9	82	2	0	93	12	109	8	0	129	347
4:30 PM	11	35	12	0	58	3	25	15	0	43	8	85	1	0	94	19	90	5	0	114	309
4:45 PM	10	39	8	0	57	2	23	13	0	38	5	100	1	0	106	16	108	7	0	131	332
5:00 PM	24	36	11	0	71	6	35	5	0	46	7	105	1	0	113	8	117	10	0	135	365
Total	61	151	40	0	252	11	126	49	0	186	29	372	5	0	406	55	424	30	0	509	1353
Approach %	24.2	59.9	15.9	-	-	5.9	67.7	26.3	-	-	7.1	91.6	1.2	-	-	10.8	83.3	5.9	-	-	-
Total %	4.5	11.2	3.0	-	18.6	0.8	9.3	3.6	-	13.7	2.1	27.5	0.4	-	30.0	4.1	31.3	2.2	-	37.6	-
PHF	0.635	0.921	0.833	-	0.887	0.458	0.733	0.766	-	0.788	0.806	0.886	0.625	-	0.898	0.724	0.906	0.750	-	0.943	0.927
Lights	55	150	36	-	241	8	123	44	-	175	26	340	2	-	368	53	395	19	-	467	1251
% Lights	90.2	99.3	90.0	-	95.6	72.7	97.6	89.8	-	94.1	89.7	91.4	40.0	-	90.6	96.4	93.2	63.3	-	91.7	92.5
Mediums	2	1	2	-	5	0	1	1	-	2	1	21	1	-	23	0	21	11	-	32	62
% Mediums	3.3	0.7	5.0	-	2.0	0.0	0.8	2.0	-	1.1	3.4	5.6	20.0	-	5.7	0.0	5.0	36.7	-	6.3	4.6
Articulated Trucks	4	0	2	-	6	3	2	4	-	9	2	11	2	-	15	2	8	0	-	10	40
% Articulated Trucks	6.6	0.0	5.0	-	2.4	27.3	1.6	8.2	-	4.8	6.9	3.0	40.0	-	3.7	3.6	1.9	0.0	-	2.0	3.0
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/04/2025



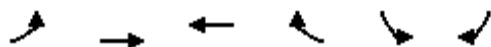
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	89	33	11	158	91	30	444	5	48	292	45
Future Volume (vph)	45	89	33	11	158	91	30	444	5	48	292	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1782		1805	1701		1503	1741		1770	1694	
Flt Permitted	0.51	1.00		0.66	1.00		0.34	1.00		0.35	1.00	
Satd. Flow (perm)	966	1782		1246	1701		544	1741		645	1694	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	59	117	43	14	203	117	32	467	5	68	411	63
RTOR Reduction (vph)	0	22	0	0	34	0	0	1	0	0	9	0
Lane Group Flow (vph)	59	138	0	14	286	0	32	471	0	68	465	0
Confl. Peds. (#/hr)							2		2			
Heavy Vehicles (%)	0%	1%	6%	0%	3%	10%	20%	9%	0%	2%	9%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	402	742		519	708		226	725		268	705	
v/s Ratio Prot		0.08			c0.17			0.27			c0.27	
v/s Ratio Perm	0.06			0.01			0.06			0.11		
v/c Ratio	0.15	0.19		0.03	0.40		0.14	0.65		0.25	0.66	
Uniform Delay, d1	10.9	11.1		10.3	12.3		10.8	14.0		11.4	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.6		0.1	1.7		1.3	4.5		2.3	4.8	
Delay (s)	11.6	11.6		10.4	14.0		12.2	18.5		13.7	18.9	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		11.6			13.8			18.1			18.2	
Approach LOS		B			B			B			B	

Intersection Summary		
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.53	B
Actuated Cycle Length (s)	60.0	Sum of lost time (s)
Intersection Capacity Utilization	65.9%	10.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		C

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/04/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	85	323	482	233	481	68
Future Volume (vph)	85	323	482	233	481	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1743	3343	2682	3213	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	1743	3343	2682	3213	1553
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	97	367	595	288	573	81
RTOR Reduction (vph)	0	0	0	77	0	50
Lane Group Flow (vph)	97	367	595	211	573	31
Heavy Vehicles (%)	8%	9%	8%	6%	9%	4%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.6	35.6	21.2	58.1	30.1	30.1
Effective Green, g (s)	7.6	35.6	21.2	58.1	30.1	30.1
Actuated g/C Ratio	0.10	0.45	0.27	0.73	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	160	782	893	1964	1219	589
v/s Ratio Prot	0.06	c0.21	c0.18	0.08	c0.18	
v/s Ratio Perm						0.02
v/c Ratio	0.61	0.47	0.67	0.11	0.47	0.05
Uniform Delay, d1	34.4	15.3	25.9	3.1	18.6	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.4	0.4	1.9	0.0	1.3	0.2
Delay (s)	40.8	15.7	27.8	3.1	19.9	15.7
Level of Service	D	B	C	A	B	B
Approach Delay (s)		20.9	19.7		19.4	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	20.4
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

12/05/2025

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	165	4	3	256	6	1	0	4	3	0	0
Future Vol, veh/h	0	165	4	3	256	6	1	0	4	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	100	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	92	92	82	82	92	92	92	65	92	65
Heavy Vehicles, %	0	1	50	100	4	0	100	0	100	0	0	0
Mvmt Flow	0	254	4	3	312	7	1	0	4	5	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	319	0	0	258	0	0	580	581	258	578	-	314
Stage 1	-	-	-	-	-	-	256	256	-	318	-	-
Stage 2	-	-	-	-	-	-	324	325	-	260	-	-
Critical Hdwy	4.1	-	-	5.1	-	-	8.1	6.5	7.2	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.5	-	6.1	-	-
Follow-up Hdwy	2.2	-	-	3.1	-	-	4.4	4	4.2	3.5	-	3.3
Pot Cap-1 Maneuver	1252	-	-	899	-	-	310	428	592	430	0	731
Stage 1	-	-	-	-	-	-	575	699	-	698	0	-
Stage 2	-	-	-	-	-	-	523	653	-	749	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1252	-	-	899	-	-	309	427	591	425	-	730
Mov Cap-2 Maneuver	-	-	-	-	-	-	309	427	-	425	-	-
Stage 1	-	-	-	-	-	-	575	699	-	698	-	-
Stage 2	-	-	-	-	-	-	520	651	-	742	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			12.3			13.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	500	1252	-	-	899	-	-	425	-
HCM Lane V/C Ratio	0.011	-	-	-	0.004	-	-	0.011	-
HCM Control Delay (s)	12.3	0	-	-	9	-	-	13.6	0
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	-

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/05/2025

Intersection	
Intersection Delay, s/veh	26.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↶	↶	↵	↵		↵	↵	
Traffic Vol, veh/h	27	133	10	41	192	317	21	139	48	192	54	37
Future Vol, veh/h	27	133	10	41	192	317	21	139	48	192	54	37
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	19	7	0	0	3	15	0	0	0	16	4	16
Mvmt Flow	42	205	15	47	218	360	31	207	72	206	58	40
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	22.9	29.1	28.4	21.9
HCM LOS	C	D	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	74%	0%	93%	0%	100%	0%	0%	59%
Vol Right, %	0%	26%	0%	7%	0%	0%	100%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	187	27	143	41	192	317	192	91
LT Vol	21	0	27	0	41	0	0	192	0
Through Vol	0	139	0	133	0	192	0	0	54
RT Vol	0	48	0	10	0	0	317	0	37
Lane Flow Rate	31	279	42	220	47	218	360	206	98
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.084	0.697	0.118	0.578	0.117	0.518	0.804	0.573	0.244
Departure Headway (Hd)	9.688	8.987	10.236	9.451	9.011	8.547	8.035	9.992	8.971
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	369	402	350	381	397	421	450	361	399
Service Time	7.464	6.763	8.017	7.231	6.78	6.316	5.804	7.769	6.747
HCM Lane V/C Ratio	0.084	0.694	0.12	0.577	0.118	0.518	0.8	0.571	0.246
HCM Control Delay	13.4	30.1	14.4	24.5	13	20.2	36.5	25.4	14.6
HCM Lane LOS	B	D	B	C	B	C	E	D	B
HCM 95th-tile Q	0.3	5.1	0.4	3.5	0.4	2.9	7.3	3.4	0.9

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/04/2025

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	73	135	154	59	44	23
Future Vol, veh/h	73	135	154	59	44	23
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	0	2	3	5	0
Mvmt Flow	112	208	226	87	60	32

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	313	0	0	703	271
Stage 1	-	-	-	270	-
Stage 2	-	-	-	433	-
Critical Hdwy	4.1	-	-	6.45	6.2
Critical Hdwy Stg 1	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	5.45	-
Follow-up Hdwy	2.2	-	-	3.545	3.3
Pot Cap-1 Maneuver	1259	-	-	399	773
Stage 1	-	-	-	768	-
Stage 2	-	-	-	648	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1259	-	-	359	772
Mov Cap-2 Maneuver	-	-	-	359	-
Stage 1	-	-	-	690	-
Stage 2	-	-	-	648	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1259	-	-	-	440
HCM Lane V/C Ratio	0.089	-	-	-	0.209
HCM Control Delay (s)	8.1	-	-	-	15.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

HCM 6th TWSC
13: E Main Ave & West Driveway

12/05/2025

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	19	171	198	56	4	7
Future Vol, veh/h	19	171	198	56	4	7
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	80	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	82	82	92	92
Heavy Vehicles, %	0	2	5	2	25	0
Mvmt Flow	29	259	241	68	4	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	309	0	-	0	560 243
Stage 1	-	-	-	-	241 -
Stage 2	-	-	-	-	319 -
Critical Hdwy	4.1	-	-	-	6.65 6.2
Critical Hdwy Stg 1	-	-	-	-	5.65 -
Critical Hdwy Stg 2	-	-	-	-	5.65 -
Follow-up Hdwy	2.2	-	-	-	3.725 3.3
Pot Cap-1 Maneuver	1263	-	-	-	453 801
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	688 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1263	-	-	-	443 799
Mov Cap-2 Maneuver	-	-	-	-	525 -
Stage 1	-	-	-	-	731 -
Stage 2	-	-	-	-	688 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1263	-	-	-	525	799
HCM Lane V/C Ratio	0.023	-	-	-	0.008	0.01
HCM Control Delay (s)	7.9	-	-	-	11.9	9.5
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/04/2025

Intersection

Int Delay, s/veh 5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶		↷	↶	↷	
Traffic Vol, veh/h	158	53	5	230	134	10
Future Vol, veh/h	158	53	5	230	134	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	2	6	20	5	2	0
Mvmt Flow	229	77	7	307	206	15

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	306	0	589 268
Stage 1	-	-	-	-	268 -
Stage 2	-	-	-	-	321 -
Critical Hdwy	-	-	4.3	-	6.42 6.2
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.38	-	3.518 3.3
Pot Cap-1 Maneuver	-	-	1159	-	471 776
Stage 1	-	-	-	-	777 -
Stage 2	-	-	-	-	735 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1159	-	468 776
Mov Cap-2 Maneuver	-	-	-	-	468 -
Stage 1	-	-	-	-	777 -
Stage 2	-	-	-	-	731 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	481	-	-	1159	-
HCM Lane V/C Ratio	0.461	-	-	0.006	-
HCM Control Delay (s)	18.7	-	-	8.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.4	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/04/2025

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑↑	↑↑	
Traffic Vol, veh/h	3	9	12	482	291	2
Future Vol, veh/h	3	9	12	482	291	2
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	100	22	33	10	13	50
Mvmt Flow	5	14	14	581	310	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	630	156	312	0	-	0
Stage 1	311	-	-	-	-	-
Stage 2	319	-	-	-	-	-
Critical Hdwy	8.8	7.34	4.76	-	-	-
Critical Hdwy Stg 1	7.8	-	-	-	-	-
Critical Hdwy Stg 2	7.8	-	-	-	-	-
Follow-up Hdwy	4.5	3.52	2.53	-	-	-
Pot Cap-1 Maneuver	248	802	1049	-	-	-
Stage 1	492	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	243	802	1049	-	-	-
Mov Cap-2 Maneuver	243	-	-	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	486	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1049	-	243	802	-	-
HCM Lane V/C Ratio	0.014	-	0.019	0.017	-	-
HCM Control Delay (s)	8.5	-	20.1	9.6	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/04/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	→		↰	→		↰	→		↰	→	
Traffic Volume (vph)	61	151	40	11	126	49	29	372	5	55	424	30
Future Volume (vph)	61	151	40	11	126	49	29	372	5	55	424	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1788		1421	1746		1597	1730		1736	1726	
Flt Permitted	0.62	1.00		0.59	1.00		0.18	1.00		0.42	1.00	
Satd. Flow (perm)	1067	1788		877	1746		305	1730		775	1726	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	80	199	53	14	162	63	31	392	5	77	597	42
RTOR Reduction (vph)	0	16	0	0	23	0	0	1	0	0	4	0
Lane Group Flow (vph)	80	236	0	14	202	0	31	396	0	77	635	0
Heavy Vehicles (%)	10%	1%	10%	27%	2%	10%	13%	9%	60%	4%	7%	37%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	444	745		365	727		127	720		322	719	
v/s Ratio Prot		c0.13			0.12			0.23			c0.37	
v/s Ratio Perm	0.07			0.02			0.10			0.10		
v/c Ratio	0.18	0.32		0.04	0.28		0.24	0.55		0.24	0.88	
Uniform Delay, d1	11.0	11.8		10.4	11.5		11.4	13.2		11.3	16.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	1.1		0.2	0.9		4.5	3.0		1.7	14.8	
Delay (s)	11.9	12.9		10.6	12.5		15.9	16.3		13.1	30.9	
Level of Service	B	B		B	B		B	B		B	C	
Approach Delay (s)		12.7			12.4			16.2			29.0	
Approach LOS		B			B			B			C	

Intersection Summary

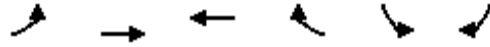
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/04/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗↗	↗↗	↖↖	↖
Traffic Volume (vph)	97	575	322	427	389	76
Future Volume (vph)	97	575	322	427	389	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1845	3406	2733	3303	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	3406	2733	3303	1599
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	110	653	398	527	463	90
RTOR Reduction (vph)	0	0	0	145	0	56
Lane Group Flow (vph)	110	653	398	382	463	34
Heavy Vehicles (%)	3%	3%	6%	4%	6%	1%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.8	34.4	19.8	56.2	29.6	29.6
Effective Green, g (s)	7.8	34.4	19.8	56.2	29.6	29.6
Actuated g/C Ratio	0.10	0.44	0.26	0.72	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	176	817	869	1979	1259	609
v/s Ratio Prot	0.06	c0.35	0.12	0.14	c0.14	
v/s Ratio Perm						0.02
v/c Ratio	0.62	0.80	0.46	0.19	0.37	0.06
Uniform Delay, d1	33.5	18.6	24.4	3.4	17.3	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	5.5	0.4	0.0	0.8	0.2
Delay (s)	40.2	24.1	24.8	3.5	18.1	15.3
Level of Service	D	C	C	A	B	B
Approach Delay (s)		26.5	12.6		17.6	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	20.4
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/05/2025

Intersection	
Intersection Delay, s/veh	29.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↶	↶	↷		↶	↷	
Traffic Vol, veh/h	38	196	25	44	143	231	35	92	17	271	116	49
Future Vol, veh/h	38	196	25	44	143	231	35	92	17	271	116	49
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	3	1	0	0	0	5	3	0	0	5	0	4
Mvmt Flow	58	302	38	50	163	263	52	137	25	291	125	53
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	43.9	21.4	19.1	31.7
HCM LOS	E	C	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	84%	0%	89%	0%	100%	0%	0%	70%
Vol Right, %	0%	16%	0%	11%	0%	0%	100%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	109	38	221	44	143	231	271	165
LT Vol	35	0	38	0	44	0	0	271	0
Through Vol	0	92	0	196	0	143	0	0	116
RT Vol	0	17	0	25	0	0	231	0	49
Lane Flow Rate	52	163	58	340	50	162	262	291	177
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.153	0.445	0.159	0.866	0.135	0.415	0.624	0.782	0.436
Departure Headway (Hd)	10.534	9.847	9.809	9.171	9.713	9.194	8.555	9.655	8.837
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	340	364	365	394	368	390	420	373	406
Service Time	8.333	7.646	7.594	6.956	7.498	6.978	6.34	7.437	6.619
HCM Lane V/C Ratio	0.153	0.448	0.159	0.863	0.136	0.415	0.624	0.78	0.436
HCM Control Delay	15.2	20.4	14.5	49	14	18.4	24.6	39.8	18.3
HCM Lane LOS	C	C	B	E	B	C	C	E	C
HCM 95th-tile Q	0.5	2.2	0.6	8.4	0.5	2	4.1	6.5	2.2

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/04/2025

Intersection

Int Delay, s/veh 3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	18	160	135	58	83	16
Future Vol, veh/h	18	160	135	58	83	16
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	1	0	0	1	0
Mvmt Flow	28	246	199	85	114	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	284	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1290	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1290	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1290	-	-	-	521
HCM Lane V/C Ratio	0.021	-	-	-	0.26
HCM Control Delay (s)	7.9	-	-	-	14.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1

HCM 6th TWSC
13: E Main Ave & West Driveway

03/23/2026

Intersection

Int Delay, s/veh 2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	25	204	140	46	65	34
Future Vol, veh/h	25	204	140	46	65	34
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	80	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	82	82	92	92
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	38	309	171	56	71	37

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	227	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1353	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1353	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1353	-	-	-	560	876
HCM Lane V/C Ratio	0.028	-	-	-	0.126	0.042
HCM Control Delay (s)	7.7	-	-	-	12.4	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.1

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/04/2025

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	236	84	8	168	58	8
Future Vol, veh/h	236	84	8	168	58	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	3	2	0	1	3	0
Mvmt Flow	342	122	11	224	89	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	464
Stage 1	-	-	403
Stage 2	-	-	246
Critical Hdwy	-	4.1	6.43
Critical Hdwy Stg 1	-	-	5.43
Critical Hdwy Stg 2	-	-	5.43
Follow-up Hdwy	-	2.2	3.527
Pot Cap-1 Maneuver	-	1108	433
Stage 1	-	-	673
Stage 2	-	-	793
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1108	429
Mov Cap-2 Maneuver	-	-	429
Stage 1	-	-	673
Stage 2	-	-	785

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	448	-	-	1108	-
HCM Lane V/C Ratio	0.227	-	-	0.01	-
HCM Control Delay (s)	15.4	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/04/2025

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑↑	↑↑	
Traffic Vol, veh/h	6	11	10	365	432	3
Future Vol, veh/h	6	11	10	365	432	3
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	17	9	0	4	4	33
Mvmt Flow	9	17	12	440	460	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	706	232	463	0	-	0
Stage 1	462	-	-	-	-	-
Stage 2	244	-	-	-	-	-
Critical Hdwy	7.14	7.08	4.1	-	-	-
Critical Hdwy Stg 1	6.14	-	-	-	-	-
Critical Hdwy Stg 2	6.14	-	-	-	-	-
Follow-up Hdwy	3.67	3.39	2.2	-	-	-
Pot Cap-1 Maneuver	339	749	1109	-	-	-
Stage 1	559	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	334	749	1109	-	-	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1109	-	334	749	-	-
HCM Lane V/C Ratio	0.011	-	0.028	0.023	-	-
HCM Control Delay (s)	8.3	-	16.1	9.9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

03/23/2026

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↔		↖		↖
Traffic Vol, veh/h	4	255	0	4	199	10	1	0	1	4	0	2
Future Vol, veh/h	4	255	0	4	199	10	1	0	1	4	0	2
Conflicting Peds, #/hr	1	0	1	0	0	0	10	0	10	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	100	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	92	92	82	82	92	92	92	65	92	65
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	6	392	0	4	243	12	1	0	1	6	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	393	0	0	674	669	403	667	-	254
Stage 1	-	-	-	-	-	-	405	405	-	252	-	-
Stage 2	-	-	-	-	-	-	269	264	-	415	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	-	3.3
Pot Cap-1 Maneuver	1321	-	-	1177	-	-	371	381	652	375	0	790
Stage 1	-	-	-	-	-	-	626	602	-	757	0	-
Stage 2	-	-	-	-	-	-	741	694	-	619	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1320	-	-	1176	-	-	364	377	645	368	-	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	364	377	-	368	-	-
Stage 1	-	-	-	-	-	-	623	598	-	753	-	-
Stage 2	-	-	-	-	-	-	729	691	-	609	-	-

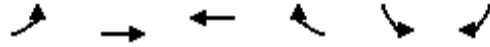
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			12.8			13.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	465	1320	-	-	1176	-	-	368	782
HCM Lane V/C Ratio	0.005	0.005	-	-	0.004	-	-	0.017	0.004
HCM Control Delay (s)	12.8	7.7	-	-	8.1	-	-	14.9	9.6
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1	0

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/04/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	87	329	492	238	491	69
Future Volume (vph)	87	329	492	238	491	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1743	3343	2682	3213	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	1743	3343	2682	3213	1553
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	99	374	607	294	585	82
RTOR Reduction (vph)	0	0	0	78	0	51
Lane Group Flow (vph)	99	374	607	216	585	31
Heavy Vehicles (%)	8%	9%	8%	6%	9%	4%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.6	35.8	21.4	58.3	30.1	30.1
Effective Green, g (s)	7.6	35.8	21.4	58.3	30.1	30.1
Actuated g/C Ratio	0.10	0.45	0.27	0.73	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	159	784	899	1966	1216	587
v/s Ratio Prot	0.06	c0.21	c0.18	0.08	c0.18	
v/s Ratio Perm						0.02
v/c Ratio	0.62	0.48	0.68	0.11	0.48	0.05
Uniform Delay, d1	34.6	15.3	25.9	3.1	18.8	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	0.5	2.0	0.0	1.4	0.2
Delay (s)	41.9	15.8	28.0	3.1	20.1	15.8
Level of Service	D	B	C	A	C	B
Approach Delay (s)		21.2	19.9		19.6	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	20.4
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/04/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	91	34	11	161	93	31	453	5	49	298	46
Future Volume (vph)	46	91	34	11	161	93	31	453	5	49	298	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1780		1805	1701		1503	1741		1770	1694	
Flt Permitted	0.50	1.00		0.65	1.00		0.33	1.00		0.34	1.00	
Satd. Flow (perm)	955	1780		1240	1701		526	1741		626	1694	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	61	120	45	14	206	119	33	477	5	69	420	65
RTOR Reduction (vph)	0	23	0	0	34	0	0	1	0	0	9	0
Lane Group Flow (vph)	61	142	0	14	291	0	33	481	0	69	476	0
Confl. Peds. (#/hr)							2		2			
Heavy Vehicles (%)	0%	1%	6%	0%	3%	10%	20%	9%	0%	2%	9%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	397	741		516	708		219	725		260	705	
v/s Ratio Prot		0.08			c0.17			0.28			c0.28	
v/s Ratio Perm	0.06			0.01			0.06			0.11		
v/c Ratio	0.15	0.19		0.03	0.41		0.15	0.66		0.27	0.67	
Uniform Delay, d1	10.9	11.1		10.3	12.3		10.9	14.1		11.5	14.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.6		0.1	1.8		1.5	4.8		2.5	5.1	
Delay (s)	11.7	11.7		10.4	14.1		12.3	18.9		14.0	19.3	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		11.7			13.9			18.5			18.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/05/2025

Intersection	
Intersection Delay, s/veh	28.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↶		↵	↑	↶	↵	↶		↵	↶	
Traffic Vol, veh/h	28	136	10	42	196	323	21	142	49	196	55	38
Future Vol, veh/h	28	136	10	42	196	323	21	142	49	196	55	38
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	19	7	0	0	3	15	0	0	0	16	4	16
Mvmt Flow	43	209	15	48	223	367	31	212	73	211	59	41
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	24.1	31.7	30.7	23
HCM LOS	C	D	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	74%	0%	93%	0%	100%	0%	0%	59%
Vol Right, %	0%	26%	0%	7%	0%	0%	100%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	21	191	28	146	42	196	323	196	93
LT Vol	21	0	28	0	42	0	0	196	0
Through Vol	0	142	0	136	0	196	0	0	55
RT Vol	0	49	0	10	0	0	323	0	38
Lane Flow Rate	31	285	43	225	48	223	367	211	100
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.086	0.724	0.124	0.6	0.121	0.538	0.833	0.594	0.253
Departure Headway (Hd)	9.842	9.141	10.399	9.614	9.153	8.688	8.175	10.147	9.123
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	363	393	344	375	391	414	440	354	392
Service Time	7.622	6.92	8.186	7.401	6.927	6.463	5.949	7.934	6.91
HCM Lane V/C Ratio	0.085	0.725	0.125	0.6	0.123	0.539	0.834	0.596	0.255
HCM Control Delay	13.6	32.6	14.7	25.9	13.2	21.2	40.5	26.8	15
HCM Lane LOS	B	D	B	D	B	C	E	D	B
HCM 95th-tile Q	0.3	5.6	0.4	3.7	0.4	3.1	8	3.6	1

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/04/2025

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	74	138	157	60	45	23
Future Vol, veh/h	74	138	157	60	45	23
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	0	2	3	5	0
Mvmt Flow	114	212	231	88	62	32

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	319	0	-	0	716
Stage 1	-	-	-	-	275
Stage 2	-	-	-	-	441
Critical Hdwy	4.1	-	-	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	2.2	-	-	-	3.545
Pot Cap-1 Maneuver	1252	-	-	-	392
Stage 1	-	-	-	-	764
Stage 2	-	-	-	-	642
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1252	-	-	-	352
Mov Cap-2 Maneuver	-	-	-	-	352
Stage 1	-	-	-	-	685
Stage 2	-	-	-	-	642

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1252	-	-	-	431
HCM Lane V/C Ratio	0.091	-	-	-	0.216
HCM Control Delay (s)	8.2	-	-	-	15.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

HCM 6th TWSC
13: E Main Ave & West Driveway

12/04/2025

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕	↕
Traffic Vol, veh/h	19	174	202	57	4	7
Future Vol, veh/h	19	174	202	57	4	7
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	82	82	92	92
Heavy Vehicles, %	0	2	5	2	25	0
Mvmt Flow	29	264	246	70	4	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	316	0	-	0	473
Stage 1	-	-	-	-	281
Stage 2	-	-	-	-	192
Critical Hdwy	4.1	-	-	-	7.3
Critical Hdwy Stg 1	-	-	-	-	6.3
Critical Hdwy Stg 2	-	-	-	-	6.3
Follow-up Hdwy	2.2	-	-	-	3.75
Pot Cap-1 Maneuver	1256	-	-	-	466
Stage 1	-	-	-	-	677
Stage 2	-	-	-	-	757
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1256	-	-	-	453
Mov Cap-2 Maneuver	-	-	-	-	453
Stage 1	-	-	-	-	659
Stage 2	-	-	-	-	757

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1256	-	-	-	453	861
HCM Lane V/C Ratio	0.023	-	-	-	0.01	0.009
HCM Control Delay (s)	7.9	0.1	-	-	13	9.2
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/04/2025

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	161	54	5	235	137	10
Future Vol, veh/h	161	54	5	235	137	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	2	6	20	5	2	0
Mvmt Flow	233	78	7	313	211	15

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	311	0	599
Stage 1	-	-	-	-	272
Stage 2	-	-	-	-	327
Critical Hdwy	-	-	4.3	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.38	-	3.518
Pot Cap-1 Maneuver	-	-	1154	-	465
Stage 1	-	-	-	-	774
Stage 2	-	-	-	-	731
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1154	-	462
Mov Cap-2 Maneuver	-	-	-	-	462
Stage 1	-	-	-	-	774
Stage 2	-	-	-	-	727

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	475	-	-	1154	-
HCM Lane V/C Ratio	0.476	-	-	0.006	-
HCM Control Delay (s)	19.3	-	-	8.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.5	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/04/2025

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑↑	↑↑	
Traffic Vol, veh/h	3	9	12	492	297	2
Future Vol, veh/h	3	9	12	492	297	2
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	100	22	33	10	13	50
Mvmt Flow	5	14	14	593	316	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	642	159	318	0	-	0
Stage 1	317	-	-	-	-	-
Stage 2	325	-	-	-	-	-
Critical Hdwy	8.8	7.34	4.76	-	-	-
Critical Hdwy Stg 1	7.8	-	-	-	-	-
Critical Hdwy Stg 2	7.8	-	-	-	-	-
Follow-up Hdwy	4.5	3.52	2.53	-	-	-
Pot Cap-1 Maneuver	242	799	1043	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	237	799	1043	-	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	481	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1043	-	237	799	-	-
HCM Lane V/C Ratio	0.014	-	0.019	0.017	-	-
HCM Control Delay (s)	8.5	-	20.5	9.6	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

12/04/2025

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔		↔
Traffic Vol, veh/h	0	168	4	3	261	6	1	0	4	3	0	0
Future Vol, veh/h	0	168	4	3	261	6	1	0	4	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	92	92	82	82	92	92	92	65	92	65
Heavy Vehicles, %	0	1	50	100	4	0	100	0	100	0	0	0
Mvmt Flow	0	258	4	3	318	7	1	0	4	5	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	325	0	0	262	0	0	427	591	133	459	-	165
Stage 1	-	-	-	-	-	-	260	260	-	328	-	-
Stage 2	-	-	-	-	-	-	167	331	-	131	-	-
Critical Hdwy	4.1	-	-	6.1	-	-	9.5	6.5	8.9	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	8.5	5.5	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	8.5	5.5	-	6.5	-	-
Follow-up Hdwy	2.2	-	-	3.2	-	-	4.5	4	4.3	3.5	-	3.3
Pot Cap-1 Maneuver	1246	-	-	809	-	-	335	422	652	490	0	857
Stage 1	-	-	-	-	-	-	507	697	-	664	0	-
Stage 2	-	-	-	-	-	-	598	649	-	865	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1246	-	-	809	-	-	333	420	651	484	-	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	333	420	-	484	-	-
Stage 1	-	-	-	-	-	-	507	697	-	664	-	-
Stage 2	-	-	-	-	-	-	594	646	-	858	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			11.6			12.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	547	1246	-	-	809	-	-	484	-
HCM Lane V/C Ratio	0.01	-	-	-	0.004	-	-	0.01	-
HCM Control Delay (s)	11.6	0	-	-	9.5	0	-	12.5	0
HCM Lane LOS	B	A	-	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/04/2025



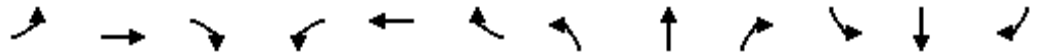
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	99	587	328	436	397	78
Future Volume (vph)	99	587	328	436	397	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1845	3406	2733	3303	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	3406	2733	3303	1599
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	112	667	405	538	473	93
RTOR Reduction (vph)	0	0	0	148	0	58
Lane Group Flow (vph)	113	667	405	390	473	35
Heavy Vehicles (%)	3%	3%	6%	4%	6%	1%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.9	34.9	20.2	56.6	29.6	29.6
Effective Green, g (s)	7.9	34.9	20.2	56.6	29.6	29.6
Actuated g/C Ratio	0.10	0.45	0.26	0.72	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	177	824	880	1980	1251	606
v/s Ratio Prot	0.06	c0.36	0.12	0.14	c0.14	
v/s Ratio Perm						0.02
v/c Ratio	0.64	0.81	0.46	0.20	0.38	0.06
Uniform Delay, d1	33.7	18.7	24.4	3.5	17.6	15.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.4	5.9	0.4	0.0	0.9	0.2
Delay (s)	41.1	24.6	24.7	3.5	18.5	15.6
Level of Service	D	C	C	A	B	B
Approach Delay (s)		27.0	12.6		18.0	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	20.4
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/04/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗	↘		↗	↘		↗	↘	
Traffic Volume (vph)	62	154	41	11	129	50	30	379	5	56	433	31
Future Volume (vph)	62	154	41	11	129	50	30	379	5	56	433	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1788		1421	1746		1596	1729		1736	1725	
Flt Permitted	0.61	1.00		0.58	1.00		0.17	1.00		0.42	1.00	
Satd. Flow (perm)	1059	1788		868	1746		281	1729		762	1725	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	82	203	54	14	165	64	32	399	5	79	610	44
RTOR Reduction (vph)	0	16	0	0	23	0	0	1	0	0	4	0
Lane Group Flow (vph)	82	241	0	14	206	0	32	403	0	79	650	0
Confl. Peds. (#/hr)							2		2			
Heavy Vehicles (%)	10%	1%	10%	27%	2%	10%	13%	9%	60%	4%	7%	37%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	441	745		361	727		117	720		317	718	
v/s Ratio Prot		c0.13			0.12			0.23			c0.38	
v/s Ratio Perm	0.08			0.02			0.11			0.10		
v/c Ratio	0.19	0.32		0.04	0.28		0.27	0.56		0.25	0.91	
Uniform Delay, d1	11.1	11.8		10.4	11.6		11.5	13.3		11.4	16.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	1.2		0.2	1.0		5.7	3.1		1.9	17.1	
Delay (s)	12.0	13.0		10.6	12.5		17.2	16.5		13.3	33.5	
Level of Service	B	B		B	B		B	B		B	C	
Approach Delay (s)		12.7			12.4			16.5			31.3	
Approach LOS		B			B			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.4				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			60.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			68.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/05/2025

Intersection	
Intersection Delay, s/veh	33.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↶		↵	↶	↶	↵	↶		↵	↶	
Traffic Vol, veh/h	39	200	26	45	146	236	36	94	17	276	118	50
Future Vol, veh/h	39	200	26	45	146	236	36	94	17	276	118	50
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	3	1	0	0	0	5	3	0	0	5	0	4
Mvmt Flow	60	308	40	51	166	268	54	140	25	297	127	54
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	51.1	23	20.1	35.1
HCM LOS	F	C	C	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	85%	0%	88%	0%	100%	0%	0%	70%
Vol Right, %	0%	15%	0%	12%	0%	0%	100%	0%	30%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	111	39	226	45	146	236	276	168
LT Vol	36	0	39	0	45	0	0	276	0
Through Vol	0	94	0	200	0	146	0	0	118
RT Vol	0	17	0	26	0	0	236	0	50
Lane Flow Rate	54	166	60	348	51	166	268	297	181
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.162	0.467	0.168	0.91	0.142	0.436	0.657	0.817	0.456
Departure Headway (Hd)	10.825	10.138	10.066	9.425	9.977	9.456	8.816	9.916	9.096
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	332	356	357	386	361	382	410	365	397
Service Time	8.583	7.897	7.802	7.161	7.713	7.192	6.552	7.654	6.834
HCM Lane V/C Ratio	0.163	0.466	0.168	0.902	0.141	0.435	0.654	0.814	0.456
HCM Control Delay	15.7	21.5	14.8	57.4	14.4	19.3	27	44.7	19.3
HCM Lane LOS	C	C	B	F	B	C	D	E	C
HCM 95th-tile Q	0.6	2.4	0.6	9.5	0.5	2.1	4.6	7.2	2.3

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/04/2025

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	18	163	138	59	85	16
Future Vol, veh/h	18	163	138	59	85	16
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	1	0	0	1	0
Mvmt Flow	28	251	203	87	116	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	290	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1283	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1283	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1283	-	-	-	514
HCM Lane V/C Ratio	0.022	-	-	-	0.269
HCM Control Delay (s)	7.9	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

HCM 6th TWSC
13: E Main Ave & West Driveway

12/04/2025

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔	↔
Traffic Vol, veh/h	26	208	143	47	66	35
Future Vol, veh/h	26	208	143	47	66	35
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	82	82	92	92
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	39	315	174	57	72	38

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	231	0	-	0	441
Stage 1	-	-	-	-	203
Stage 2	-	-	-	-	238
Critical Hdwy	4.1	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	2.2	-	-	-	3.5
Pot Cap-1 Maneuver	1349	-	-	-	550
Stage 1	-	-	-	-	817
Stage 2	-	-	-	-	785
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1349	-	-	-	531
Mov Cap-2 Maneuver	-	-	-	-	531
Stage 1	-	-	-	-	788
Stage 2	-	-	-	-	785

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1349	-	-	-	531	916
HCM Lane V/C Ratio	0.029	-	-	-	0.135	0.042
HCM Control Delay (s)	7.7	0.1	-	-	12.8	9.1
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/04/2025

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	241	86	8	171	59	8
Future Vol, veh/h	241	86	8	171	59	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	3	2	0	1	3	0
Mvmt Flow	349	125	11	228	91	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	474	0	662
Stage 1	-	-	-	-	412
Stage 2	-	-	-	-	250
Critical Hdwy	-	-	4.1	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.2	-	3.527
Pot Cap-1 Maneuver	-	-	1099	-	425
Stage 1	-	-	-	-	666
Stage 2	-	-	-	-	789
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1099	-	421
Mov Cap-2 Maneuver	-	-	-	-	421
Stage 1	-	-	-	-	666
Stage 2	-	-	-	-	781

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	439	-	-	1099	-
HCM Lane V/C Ratio	0.235	-	-	0.01	-
HCM Control Delay (s)	15.7	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/04/2025

Intersection

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑↑	↑↑	
Traffic Vol, veh/h	6	11	10	372	441	3
Future Vol, veh/h	6	11	10	372	441	3
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	17	9	0	4	4	33
Mvmt Flow	9	17	12	448	469	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	719	236	472	0	-	0
Stage 1	471	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	7.14	7.08	4.1	-	-	-
Critical Hdwy Stg 1	6.14	-	-	-	-	-
Critical Hdwy Stg 2	6.14	-	-	-	-	-
Follow-up Hdwy	3.67	3.39	2.2	-	-	-
Pot Cap-1 Maneuver	333	745	1100	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	328	745	1100	-	-	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	545	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1100	-	328	745	-	-
HCM Lane V/C Ratio	0.011	-	0.028	0.023	-	-
HCM Control Delay (s)	8.3	-	16.3	9.9	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

12/04/2025

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔		↔
Traffic Vol, veh/h	4	260	0	4	203	10	1	0	1	4	0	2
Future Vol, veh/h	4	260	0	4	203	10	1	0	1	4	0	2
Conflicting Peds, #/hr	1	0	1	0	0	0	10	0	10	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	92	92	82	82	92	92	92	65	92	65
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	6	400	0	4	248	12	1	0	1	6	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	261	0	0	401	0	0	555	682	211	485	-	141
Stage 1	-	-	-	-	-	-	413	413	-	263	-	-
Stage 2	-	-	-	-	-	-	142	269	-	222	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	-	3.3
Pot Cap-1 Maneuver	1315	-	-	1169	-	-	419	375	801	470	0	888
Stage 1	-	-	-	-	-	-	592	597	-	725	0	-
Stage 2	-	-	-	-	-	-	852	690	-	766	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1314	-	-	1168	-	-	410	371	793	461	-	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	410	371	-	461	-	-
Stage 1	-	-	-	-	-	-	588	593	-	720	-	-
Stage 2	-	-	-	-	-	-	838	687	-	753	-	-

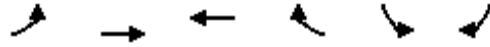
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			11.7			11.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	541	1314	-	-	1168	-	-	461	879
HCM Lane V/C Ratio	0.004	0.005	-	-	0.004	-	-	0.013	0.004
HCM Control Delay (s)	11.7	7.8	0	-	8.1	0	-	12.9	9.1
HCM Lane LOS	B	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	0

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

03/06/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	59	233	410	156	314	58
Future Volume (vph)	59	233	410	156	314	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1810	3505	2787	3019	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1810	3505	2787	3019	1583
Peak-hour factor, PHF	0.92	0.92	0.65	0.65	0.89	0.89
Adj. Flow (vph)	64	253	631	240	353	65
RTOR Reduction (vph)	0	0	0	63	0	40
Lane Group Flow (vph)	64	253	631	177	353	25
Heavy Vehicles (%)	5%	5%	3%	2%	16%	2%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	6.7	34.2	20.7	57.5	30.0	30.0
Effective Green, g (s)	6.7	34.2	20.7	57.5	30.0	30.0
Actuated g/C Ratio	0.09	0.44	0.27	0.74	0.39	0.39
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	148	795	932	2059	1164	610
v/s Ratio Prot	0.04	c0.14	c0.18	0.06	c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.43	0.32	0.68	0.09	0.30	0.04
Uniform Delay, d1	33.7	14.2	25.6	2.8	16.6	14.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.2	2.0	0.0	0.7	0.1
Delay (s)	35.8	14.4	27.5	2.8	17.3	15.0
Level of Service	D	B	C	A	B	B
Approach Delay (s)		18.7	20.7		16.9	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	77.8	Sum of lost time (s)	20.4
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

03/06/2026



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	78	32	6	72	44	12	346	4	58	290	33
Future Volume (vph)	19	78	32	6	72	44	12	346	4	58	290	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1711		1805	1703		1443	1774		1770	1726	
Flt Permitted	0.67	1.00		0.65	1.00		0.42	1.00		0.36	1.00	
Satd. Flow (perm)	1265	1711		1236	1703		633	1774		679	1726	
Peak-hour factor, PHF	0.65	0.65	0.65	0.81	0.81	0.81	0.77	0.77	0.77	0.80	0.80	0.80
Adj. Flow (vph)	29	120	49	7	89	54	16	449	5	72	362	41
RTOR Reduction (vph)	0	25	0	0	32	0	0	1	0	0	7	0
Lane Group Flow (vph)	29	145	0	7	112	0	16	453	0	73	397	0
Confl. Peds. (#/hr)							1		1			
Heavy Vehicles (%)	0%	1%	19%	0%	3%	9%	25%	7%	0%	2%	9%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	527	712		515	709		263	739		282	719	
v/s Ratio Prot		c0.08			0.07			c0.26			0.23	
v/s Ratio Perm	0.02			0.01			0.03			0.11		
v/c Ratio	0.06	0.20		0.01	0.16		0.06	0.61		0.26	0.55	
Uniform Delay, d1	10.4	11.2		10.3	10.9		10.5	13.7		11.4	13.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.6		0.0	0.5		0.4	3.8		2.2	3.0	
Delay (s)	10.6	11.8		10.3	11.4		10.9	17.5		13.7	16.3	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		11.6			11.3			17.3			15.9	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.2				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			60.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			47.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

03/06/2026

Intersection	
Intersection Delay, s/veh	18
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↑	↵	↵	↵		↵	↵	
Traffic Vol, veh/h	46	112	19	14	94	232	20	95	53	182	44	46
Future Vol, veh/h	46	112	19	14	94	232	20	95	53	182	44	46
Peak Hour Factor	0.71	0.71	0.71	0.74	0.74	0.74	0.70	0.70	0.70	0.83	0.83	0.83
Heavy Vehicles, %	31	11	16	0	2	12	0	1	0	13	0	2
Mvmt Flow	65	158	27	19	127	314	29	136	76	219	53	55
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	16.4	19	17.1	18.3
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	64%	0%	85%	0%	100%	0%	0%	49%
Vol Right, %	0%	36%	0%	15%	0%	0%	100%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	148	46	131	14	94	232	182	90
LT Vol	20	0	46	0	14	0	0	182	0
Through Vol	0	95	0	112	0	94	0	0	44
RT Vol	0	53	0	19	0	0	232	0	46
Lane Flow Rate	29	211	65	185	19	127	314	219	108
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.07	0.471	0.167	0.426	0.043	0.275	0.631	0.53	0.229
Departure Headway (Hd)	8.771	8.019	9.285	8.313	8.264	7.786	7.243	8.699	7.597
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	406	446	385	430	432	460	495	412	470
Service Time	6.568	5.816	7.084	6.111	6.048	5.57	5.026	6.491	5.388
HCM Lane V/C Ratio	0.071	0.473	0.169	0.43	0.044	0.276	0.634	0.532	0.23
HCM Control Delay	12.2	17.8	14	17.2	11.4	13.5	21.7	21	12.7
HCM Lane LOS	B	C	B	C	B	B	C	C	B
HCM 95th-tile Q	0.2	2.5	0.6	2.1	0.1	1.1	4.3	3	0.9

HCM 6th TWSC
10: E Main Ave & N Carlton St

03/06/2026

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	10	77	80	46	36	6
Future Vol, veh/h	10	77	80	46	36	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	88	88	65	65
Heavy Vehicles, %	0	0	5	2	3	0
Mvmt Flow	13	101	91	52	55	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	143	0	-	0	244 117
Stage 1	-	-	-	-	117 -
Stage 2	-	-	-	-	127 -
Critical Hdwy	4.1	-	-	-	6.43 6.2
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.2	-	-	-	3.527 3.3
Pot Cap-1 Maneuver	1452	-	-	-	742 941
Stage 1	-	-	-	-	906 -
Stage 2	-	-	-	-	896 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1452	-	-	-	735 941
Mov Cap-2 Maneuver	-	-	-	-	735 -
Stage 1	-	-	-	-	898 -
Stage 2	-	-	-	-	896 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1452	-	-	-	759
HCM Lane V/C Ratio	0.009	-	-	-	0.085
HCM Control Delay (s)	7.5	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 6th TWSC
13: E Main Ave & West Driveway

03/06/2026

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	15	113	110	55	47	31
Future Vol, veh/h	15	113	110	55	47	31
Conflicting Peds, #/hr	0	0	0	0	4	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	80	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	72	72	65	65
Heavy Vehicles, %	0	5	5	0	0	0
Mvmt Flow	23	171	153	76	72	48

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	229	0	-	0	374 157
Stage 1	-	-	-	-	153 -
Stage 2	-	-	-	-	221 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1351	-	-	-	631 894
Stage 1	-	-	-	-	880 -
Stage 2	-	-	-	-	821 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1351	-	-	-	620 891
Mov Cap-2 Maneuver	-	-	-	-	667 -
Stage 1	-	-	-	-	865 -
Stage 2	-	-	-	-	821 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1351	-	-	-	667	891
HCM Lane V/C Ratio	0.017	-	-	-	0.108	0.054
HCM Control Delay (s)	7.7	-	-	-	11.1	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.2

HCM 6th TWSC
11: N Carlton St & E Washington Ave

03/06/2026

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	28	5	100	55	5
Future Vol, veh/h	130	28	5	100	55	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	76	76	87	87
Heavy Vehicles, %	6	4	0	5	2	0
Mvmt Flow	200	43	7	132	63	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	243	0	368 222
Stage 1	-	-	-	-	222 -
Stage 2	-	-	-	-	146 -
Critical Hdwy	-	-	4.1	-	6.42 6.2
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.2	-	3.518 3.3
Pot Cap-1 Maneuver	-	-	1335	-	632 823
Stage 1	-	-	-	-	815 -
Stage 2	-	-	-	-	881 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1335	-	629 823
Mov Cap-2 Maneuver	-	-	-	-	629 -
Stage 1	-	-	-	-	815 -
Stage 2	-	-	-	-	877 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1335	-
HCM Lane V/C Ratio	0.107	-	-	0.005	-
HCM Control Delay (s)	11.3	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

03/06/2026

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑↑	↑↑	
Traffic Vol, veh/h	5	18	18	364	258	12
Future Vol, veh/h	5	18	18	364	258	12
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	88	88	84	84
Heavy Vehicles, %	40	6	0	10	8	25
Mvmt Flow	8	27	20	414	307	14

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	561	161	321	0	-	0
Stage 1	314	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Critical Hdwy	7.6	7.02	4.1	-	-	-
Critical Hdwy Stg 1	6.6	-	-	-	-	-
Critical Hdwy Stg 2	6.6	-	-	-	-	-
Follow-up Hdwy	3.9	3.36	2.2	-	-	-
Pot Cap-1 Maneuver	377	843	1250	-	-	-
Stage 1	612	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	369	843	1250	-	-	-
Mov Cap-2 Maneuver	369	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1250	-	369	843	-	-
HCM Lane V/C Ratio	0.016	-	0.021	0.032	-	-
HCM Control Delay (s)	7.9	-	15	9.4	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

03/06/2026

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↖		↔		↖		↖
Traffic Vol, veh/h	2	146	3	5	163	6	2	0	8	8	0	5
Future Vol, veh/h	2	146	3	5	163	6	2	0	8	8	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	100	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	67	67	67	72	72	72	65	65	65	65	65	65
Heavy Vehicles, %	0	4	0	0	3	0	50	0	100	0	0	0
Mvmt Flow	3	218	4	7	226	8	3	0	12	12	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	234	0	0	222	0	0	475	474	221	473	-	227
Stage 1	-	-	-	-	-	-	226	226	-	240	-	-
Stage 2	-	-	-	-	-	-	249	248	-	233	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.6	6.5	7.2	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.5	-	6.1	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.95	4	4.2	3.5	-	3.3
Pot Cap-1 Maneuver	1345	-	-	1359	-	-	429	492	625	505	0	817
Stage 1	-	-	-	-	-	-	680	721	-	768	0	-
Stage 2	-	-	-	-	-	-	660	705	-	775	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1345	-	-	1359	-	-	422	489	624	492	-	816
Mov Cap-2 Maneuver	-	-	-	-	-	-	422	489	-	492	-	-
Stage 1	-	-	-	-	-	-	679	720	-	766	-	-
Stage 2	-	-	-	-	-	-	650	701	-	757	-	-

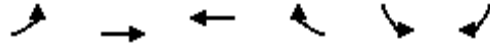
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			11.5			11.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	569	1345	-	-	1359	-	-	492	816
HCM Lane V/C Ratio	0.027	0.002	-	-	0.005	-	-	0.025	0.009
HCM Control Delay (s)	11.5	7.7	-	-	7.7	-	-	12.5	9.5
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1	0

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

03/13/2026



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↑↑	↗↘	↗↘	↗
Traffic Volume (vph)	59	233	570	156	314	58
Future Volume (vph)	59	233	570	156	314	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	1810	3505	2787	3019	1583
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1719	1810	3505	2787	3019	1583
Peak-hour factor, PHF	0.92	0.92	0.65	0.65	0.89	0.89
Adj. Flow (vph)	64	253	877	240	353	65
RTOR Reduction (vph)	0	0	0	59	0	42
Lane Group Flow (vph)	64	253	877	181	353	23
Heavy Vehicles (%)	5%	5%	3%	2%	16%	2%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	6.9	39.6	25.9	62.6	29.9	29.9
Effective Green, g (s)	6.9	39.6	25.9	62.6	29.9	29.9
Actuated g/C Ratio	0.08	0.48	0.31	0.75	0.36	0.36
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	142	862	1092	2099	1086	569
v/s Ratio Prot	0.04	c0.14	c0.25	0.06	c0.12	
v/s Ratio Perm						0.01
v/c Ratio	0.45	0.29	0.80	0.09	0.33	0.04
Uniform Delay, d1	36.3	13.2	26.3	2.7	19.3	17.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.2	4.4	0.0	0.8	0.1
Delay (s)	38.6	13.4	30.6	2.7	20.1	17.4
Level of Service	D	B	C	A	C	B
Approach Delay (s)		18.5	24.6		19.7	
Approach LOS		B	C		B	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	20.4
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

03/10/2026



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	78	32	6	82	44	12	346	4	58	290	43
Future Volume (vph)	19	78	32	6	82	44	12	346	4	58	290	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.95		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1711		1805	1713		1443	1774		1770	1722	
Flt Permitted	0.66	1.00		0.65	1.00		0.40	1.00		0.36	1.00	
Satd. Flow (perm)	1251	1711		1236	1713		612	1774		679	1722	
Peak-hour factor, PHF	0.65	0.65	0.65	0.81	0.81	0.81	0.77	0.77	0.77	0.80	0.80	0.80
Adj. Flow (vph)	29	120	49	7	101	54	16	449	5	72	362	54
RTOR Reduction (vph)	0	25	0	0	32	0	0	1	0	0	9	0
Lane Group Flow (vph)	29	145	0	7	124	0	16	453	0	73	408	0
Confl. Peds. (#/hr)							1		1			
Heavy Vehicles (%)	0%	1%	19%	0%	3%	9%	25%	7%	0%	2%	9%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	521	712		515	713		255	739		282	717	
v/s Ratio Prot		c0.08			0.07			c0.26			0.24	
v/s Ratio Perm	0.02			0.01			0.03			0.11		
v/c Ratio	0.06	0.20		0.01	0.17		0.06	0.61		0.26	0.57	
Uniform Delay, d1	10.5	11.2		10.3	11.0		10.5	13.7		11.4	13.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.6		0.0	0.5		0.5	3.8		2.2	3.3	
Delay (s)	10.7	11.8		10.3	11.5		11.0	17.5		13.7	16.6	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		11.6			11.5			17.3			16.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

03/10/2026

Intersection	
Intersection Delay, s/veh	24.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↑	↵	↵	↵		↵	↵	
Traffic Vol, veh/h	46	112	19	14	254	232	30	95	53	182	44	46
Future Vol, veh/h	46	112	19	14	254	232	30	95	53	182	44	46
Peak Hour Factor	0.71	0.71	0.71	0.74	0.74	0.74	0.70	0.70	0.70	0.83	0.83	0.83
Heavy Vehicles, %	31	11	16	0	2	12	0	1	0	13	0	2
Mvmt Flow	65	158	27	19	343	314	43	136	76	219	53	55
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	19	29.6	20	21.7
HCM LOS	C	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	64%	0%	85%	0%	100%	0%	0%	49%
Vol Right, %	0%	36%	0%	15%	0%	0%	100%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	148	46	131	14	254	232	182	90
LT Vol	30	0	46	0	14	0	0	182	0
Through Vol	0	95	0	112	0	254	0	0	44
RT Vol	0	53	0	19	0	0	232	0	46
Lane Flow Rate	43	211	65	185	19	343	314	219	108
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.116	0.526	0.185	0.476	0.046	0.784	0.669	0.588	0.257
Departure Headway (Hd)	9.71	8.954	10.26	9.281	8.702	8.223	7.678	9.65	8.54
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	369	402	350	387	411	439	470	375	421
Service Time	7.47	6.713	8.022	7.043	6.454	5.974	5.429	7.407	6.297
HCM Lane V/C Ratio	0.117	0.525	0.186	0.478	0.046	0.781	0.668	0.584	0.257
HCM Control Delay	13.7	21.3	15.4	20.2	11.9	35	24.7	25.4	14.2
HCM Lane LOS	B	C	C	C	B	D	C	D	B
HCM 95th-tile Q	0.4	3	0.7	2.5	0.1	6.9	4.8	3.6	1

HCM 6th TWSC
10: E Main Ave & N Carlton St

03/10/2026

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	10	77	80	156	36	6
Future Vol, veh/h	10	77	80	156	36	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	88	88	65	65
Heavy Vehicles, %	0	0	5	2	3	0
Mvmt Flow	13	101	91	177	55	9

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	268	0	0 307 180
Stage 1	-	-	- 180 -
Stage 2	-	-	- 127 -
Critical Hdwy	4.1	-	- 6.43 6.2
Critical Hdwy Stg 1	-	-	- 5.43 -
Critical Hdwy Stg 2	-	-	- 5.43 -
Follow-up Hdwy	2.2	-	- 3.527 3.3
Pot Cap-1 Maneuver	1307	-	- 683 868
Stage 1	-	-	- 849 -
Stage 2	-	-	- 896 -
Platoon blocked, %		-	- -
Mov Cap-1 Maneuver	1307	-	- 675 868
Mov Cap-2 Maneuver	-	-	- 675 -
Stage 1	-	-	- 840 -
Stage 2	-	-	- 896 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1307	-	-	-	697
HCM Lane V/C Ratio	0.01	-	-	-	0.093
HCM Control Delay (s)	7.8	-	-	-	10.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 6th TWSC
11: N Carlton St & E Washington Ave

03/10/2026

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	38	25	100	55	5
Future Vol, veh/h	130	38	25	100	55	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	76	76	87	87
Heavy Vehicles, %	6	4	0	5	2	0
Mvmt Flow	200	58	33	132	63	6

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	258	0	427 229
Stage 1	-	-	-	-	229 -
Stage 2	-	-	-	-	198 -
Critical Hdwy	-	-	4.1	-	6.42 6.2
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.2	-	3.518 3.3
Pot Cap-1 Maneuver	-	-	1318	-	584 815
Stage 1	-	-	-	-	809 -
Stage 2	-	-	-	-	835 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1318	-	569 815
Mov Cap-2 Maneuver	-	-	-	-	569 -
Stage 1	-	-	-	-	809 -
Stage 2	-	-	-	-	814 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1318	-
HCM Lane V/C Ratio	0.118	-	-	0.025	-
HCM Control Delay (s)	12	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

03/10/2026



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	78	32	6	459	44	12	346	4	58	290	56
Future Volume (vph)	19	78	32	6	459	44	12	346	4	58	290	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1711		1805	1811		1443	1774		1770	1716	
Flt Permitted	0.20	1.00		0.65	1.00		0.39	1.00		0.36	1.00	
Satd. Flow (perm)	377	1711		1236	1811		587	1774		679	1716	
Peak-hour factor, PHF	0.65	0.65	0.65	0.81	0.81	0.81	0.77	0.77	0.77	0.80	0.80	0.80
Adj. Flow (vph)	29	120	49	7	567	54	16	449	5	72	362	70
RTOR Reduction (vph)	0	25	0	0	6	0	0	1	0	0	12	0
Lane Group Flow (vph)	29	145	0	7	615	0	16	453	0	73	421	0
Confl. Peds. (#/hr)							1		1			
Heavy Vehicles (%)	0%	1%	19%	0%	3%	9%	25%	7%	0%	2%	9%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	157	712		515	754		244	739		282	715	
v/s Ratio Prot		0.08			c0.34			c0.26			0.25	
v/s Ratio Perm	0.08			0.01			0.03			0.11		
v/c Ratio	0.18	0.20		0.01	0.82		0.07	0.61		0.26	0.59	
Uniform Delay, d1	11.1	11.2		10.3	15.5		10.5	13.7		11.4	13.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.6		0.0	9.5		0.5	3.8		2.2	3.5	
Delay (s)	13.6	11.8		10.3	25.0		11.0	17.5		13.7	17.1	
Level of Service	B	B		B	C		B	B		B	B	
Approach Delay (s)		12.1			24.8			17.3			16.6	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay			19.1				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			60.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			66.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

03/10/2026

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↑	↵	↵	↵		↵	↵	
Traffic Vol, veh/h	46	112	19	14	94	232	43	95	53	182	44	46
Future Vol, veh/h	46	112	19	14	94	232	43	95	53	182	44	46
Peak Hour Factor	0.71	0.71	0.71	0.74	0.74	0.74	0.70	0.70	0.70	0.83	0.83	0.83
Heavy Vehicles, %	31	11	16	0	2	12	0	1	0	13	0	2
Mvmt Flow	65	158	27	19	127	314	61	136	76	219	53	55
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	17	20.3	17.2	19
HCM LOS	C	C	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	64%	0%	85%	0%	100%	0%	0%	49%
Vol Right, %	0%	36%	0%	15%	0%	0%	100%	0%	51%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	148	46	131	14	94	232	182	90
LT Vol	43	0	46	0	14	0	0	182	0
Through Vol	0	95	0	112	0	94	0	0	44
RT Vol	0	53	0	19	0	0	232	0	46
Lane Flow Rate	61	211	65	185	19	127	314	219	108
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.152	0.481	0.172	0.44	0.045	0.285	0.655	0.545	0.236
Departure Headway (Hd)	8.936	8.184	9.557	8.583	8.545	8.066	7.522	8.951	7.847
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	440	376	419	422	448	483	403	458
Service Time	6.686	5.933	7.31	6.335	6.245	5.766	5.222	6.7	5.596
HCM Lane V/C Ratio	0.152	0.48	0.173	0.442	0.045	0.283	0.65	0.543	0.236
HCM Control Delay	13.3	18.3	14.3	17.9	11.6	13.9	23.4	22	13
HCM Lane LOS	B	C	B	C	B	B	C	C	B
HCM 95th-tile Q	0.5	2.6	0.6	2.2	0.1	1.2	4.6	3.2	0.9

HCM 6th TWSC
10: E Main Ave & N Carlton St

03/10/2026

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	10	77	80	46	36	6
Future Vol, veh/h	10	77	80	46	36	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	88	88	65	65
Heavy Vehicles, %	0	0	5	2	3	0
Mvmt Flow	13	101	91	52	55	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	143	0	-	0	244 117
Stage 1	-	-	-	-	117 -
Stage 2	-	-	-	-	127 -
Critical Hdwy	4.1	-	-	-	6.43 6.2
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	2.2	-	-	-	3.527 3.3
Pot Cap-1 Maneuver	1452	-	-	-	742 941
Stage 1	-	-	-	-	906 -
Stage 2	-	-	-	-	896 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1452	-	-	-	735 941
Mov Cap-2 Maneuver	-	-	-	-	735 -
Stage 1	-	-	-	-	898 -
Stage 2	-	-	-	-	896 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1452	-	-	-	759
HCM Lane V/C Ratio	0.009	-	-	-	0.085
HCM Control Delay (s)	7.5	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

HCM 6th TWSC
11: N Carlton St & E Washington Ave

03/13/2026

Intersection

Int Delay, s/veh 6.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	51	265	100	55	5
Future Vol, veh/h	130	51	265	100	55	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	76	76	87	87
Heavy Vehicles, %	6	4	0	5	2	0
Mvmt Flow	200	78	349	132	63	6

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	278	0	1069
Stage 1	-	-	-	-	239
Stage 2	-	-	-	-	830
Critical Hdwy	-	-	4.1	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.2	-	3.518
Pot Cap-1 Maneuver	-	-	1296	-	245
Stage 1	-	-	-	-	801
Stage 2	-	-	-	-	428
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1296	-	179
Mov Cap-2 Maneuver	-	-	-	-	179
Stage 1	-	-	-	-	801
Stage 2	-	-	-	-	313

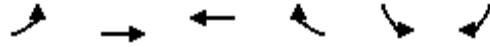
Approach	EB	WB	NB
HCM Control Delay, s	0	6.4	34.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	191	-	-	1296	-
HCM Lane V/C Ratio	0.361	-	-	0.269	-
HCM Control Delay (s)	34.1	-	-	8.8	-
HCM Lane LOS	D	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	1.1	-

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/11/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	88	333	497	240	496	70
Future Volume (vph)	88	333	497	240	496	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1743	3343	2682	3213	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	1743	3343	2682	3213	1553
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	100	378	614	296	590	83
RTOR Reduction (vph)	0	0	0	79	0	52
Lane Group Flow (vph)	100	378	614	217	590	31
Heavy Vehicles (%)	8%	9%	8%	6%	9%	4%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.6	36.0	21.6	58.5	30.1	30.1
Effective Green, g (s)	7.6	36.0	21.6	58.5	30.1	30.1
Actuated g/C Ratio	0.10	0.45	0.27	0.73	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	159	787	906	1968	1213	586
v/s Ratio Prot	0.06	c0.22	c0.18	0.08	c0.18	
v/s Ratio Perm						0.02
v/c Ratio	0.63	0.48	0.68	0.11	0.49	0.05
Uniform Delay, d1	34.7	15.3	25.9	3.1	18.9	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.5	2.0	0.0	1.4	0.2
Delay (s)	42.3	15.8	28.0	3.1	20.3	15.9
Level of Service	D	B	C	A	C	B
Approach Delay (s)		21.3	19.9		19.8	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	20.4
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/11/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	92	34	11	163	94	31	457	5	49	301	46
Future Volume (vph)	46	92	34	11	163	94	31	457	5	49	301	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	1.00		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1781		1805	1701		1503	1742		1770	1694	
Flt Permitted	0.50	1.00		0.65	1.00		0.33	1.00		0.33	1.00	
Satd. Flow (perm)	945	1781		1239	1701		520	1742		618	1694	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	61	121	45	14	209	121	33	481	5	69	424	65
RTOR Reduction (vph)	0	22	0	0	35	0	0	1	0	0	9	0
Lane Group Flow (vph)	61	144	0	14	295	0	33	485	0	69	480	0
Confl. Peds. (#/hr)							2		2			
Heavy Vehicles (%)	0%	1%	6%	0%	3%	10%	20%	9%	0%	2%	9%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	393	742		516	708		216	725		257	705	
v/s Ratio Prot		0.08			c0.17			0.28			c0.28	
v/s Ratio Perm	0.06			0.01			0.06			0.11		
v/c Ratio	0.16	0.19		0.03	0.42		0.15	0.67		0.27	0.68	
Uniform Delay, d1	10.9	11.1		10.3	12.4		10.9	14.2		11.5	14.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.6		0.1	1.8		1.5	4.9		2.6	5.2	
Delay (s)	11.8	11.7		10.4	14.2		12.4	19.0		14.0	19.5	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		11.7			14.0			18.6			18.8	
Approach LOS		B			B			B			B	

Intersection Summary		
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.55	B
Actuated Cycle Length (s)	60.0	Sum of lost time (s)
Intersection Capacity Utilization	67.0%	10.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		C

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/11/2025

Intersection	
Intersection Delay, s/veh	29.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↶	↶	↷		↶	↷	
Traffic Vol, veh/h	28	137	10	42	198	327	22	143	49	198	56	38
Future Vol, veh/h	28	137	10	42	198	327	22	143	49	198	56	38
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	19	7	0	0	3	15	0	0	0	16	4	16
Mvmt Flow	43	211	15	48	225	372	33	213	73	213	60	41
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	24.7	33.4	31.6	23.5
HCM LOS	C	D	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	74%	0%	93%	0%	100%	0%	0%	60%
Vol Right, %	0%	26%	0%	7%	0%	0%	100%	0%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	192	28	147	42	198	327	198	94
LT Vol	22	0	28	0	42	0	0	198	0
Through Vol	0	143	0	137	0	198	0	0	56
RT Vol	0	49	0	10	0	0	327	0	38
Lane Flow Rate	33	287	43	226	48	225	372	213	101
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.09	0.733	0.125	0.609	0.122	0.547	0.85	0.604	0.258
Departure Headway (Hd)	9.911	9.209	10.475	9.689	9.213	8.748	8.235	10.218	9.197
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	361	393	341	371	389	412	438	353	389
Service Time	7.696	6.994	8.266	7.48	6.989	6.524	6.011	8.006	6.984
HCM Lane V/C Ratio	0.091	0.73	0.126	0.609	0.123	0.546	0.849	0.603	0.26
HCM Control Delay	13.7	33.6	14.8	26.6	13.3	21.7	43	27.5	15.2
HCM Lane LOS	B	D	B	D	B	C	E	D	C
HCM 95th-tile Q	0.3	5.7	0.4	3.8	0.4	3.2	8.4	3.8	1

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/11/2025

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	75	139	159	61	45	24
Future Vol, veh/h	75	139	159	61	45	24
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	0	2	3	5	0
Mvmt Flow	115	214	234	90	62	33

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	324	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1247	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1247	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1247	-	-	-	428
HCM Lane V/C Ratio	0.093	-	-	-	0.221
HCM Control Delay (s)	8.2	-	-	-	15.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8

HCM 6th TWSC
13: E Main Ave & West Driveway

12/11/2025

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	20	176	204	58	4	7
Future Vol, veh/h	20	176	204	58	4	7
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	80	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	82	82	92	92
Heavy Vehicles, %	0	2	5	2	25	0
Mvmt Flow	30	267	249	71	4	8

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	320	0	-	0	578 251
Stage 1	-	-	-	-	249 -
Stage 2	-	-	-	-	329 -
Critical Hdwy	4.1	-	-	-	6.65 6.2
Critical Hdwy Stg 1	-	-	-	-	5.65 -
Critical Hdwy Stg 2	-	-	-	-	5.65 -
Follow-up Hdwy	2.2	-	-	-	3.725 3.3
Pot Cap-1 Maneuver	1251	-	-	-	441 793
Stage 1	-	-	-	-	742 -
Stage 2	-	-	-	-	680 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1251	-	-	-	430 791
Mov Cap-2 Maneuver	-	-	-	-	516 -
Stage 1	-	-	-	-	724 -
Stage 2	-	-	-	-	680 -

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1251	-	-	-	516	791
HCM Lane V/C Ratio	0.024	-	-	-	0.008	0.01
HCM Control Delay (s)	7.9	-	-	-	12	9.6
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0	0

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/11/2025

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	163	55	5	237	138	10
Future Vol, veh/h	163	55	5	237	138	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	2	6	20	5	2	0
Mvmt Flow	236	80	7	316	212	15

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	316	0	606	276
Stage 1	-	-	-	-	276	-
Stage 2	-	-	-	-	330	-
Critical Hdwy	-	-	4.3	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.38	-	3.518	3.3
Pot Cap-1 Maneuver	-	-	1149	-	460	768
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	728	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1149	-	457	768
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	724	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	470	-	-	1149	-
HCM Lane V/C Ratio	0.484	-	-	0.006	-
HCM Control Delay (s)	19.6	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.6	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/11/2025

Intersection

Int Delay, s/veh 0.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	↘	↗		↑↑	↑↑	
Traffic Vol, veh/h	3	9	12	497	300	2
Future Vol, veh/h	3	9	12	497	300	2
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	100	22	33	10	13	50
Mvmt Flow	5	14	14	599	319	2

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	648	161	321	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	328	-	-	-	-	-
Critical Hdwy	8.8	7.34	4.76	-	-	-
Critical Hdwy Stg 1	7.8	-	-	-	-	-
Critical Hdwy Stg 2	7.8	-	-	-	-	-
Follow-up Hdwy	4.5	3.52	2.53	-	-	-
Pot Cap-1 Maneuver	239	796	1040	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	234	796	1040	-	-	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	12.4	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1040	-	234	796	-	-
HCM Lane V/C Ratio	0.014	-	0.02	0.017	-	-
HCM Control Delay (s)	8.5	-	20.7	9.6	-	-
HCM Lane LOS	A	-	C	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

12/11/2025

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	170	4	3	264	6	1	0	4	3	0	0
Future Vol, veh/h	0	170	4	3	264	6	1	0	4	3	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	2	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	100	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	92	92	82	82	92	92	92	65	92	65
Heavy Vehicles, %	0	1	50	100	4	0	100	0	100	0	0	0
Mvmt Flow	0	262	4	3	322	7	1	0	4	5	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	329	0	0	266	0	0	598	599	266	596	-	324
Stage 1	-	-	-	-	-	-	264	264	-	328	-	-
Stage 2	-	-	-	-	-	-	334	335	-	268	-	-
Critical Hdwy	4.1	-	-	5.1	-	-	8.1	6.5	7.2	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	7.1	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	7.1	5.5	-	6.1	-	-
Follow-up Hdwy	2.2	-	-	3.1	-	-	4.4	4	4.2	3.5	-	3.3
Pot Cap-1 Maneuver	1242	-	-	891	-	-	300	418	586	418	0	722
Stage 1	-	-	-	-	-	-	569	694	-	689	0	-
Stage 2	-	-	-	-	-	-	516	646	-	742	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1242	-	-	891	-	-	299	417	585	413	-	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	299	417	-	413	-	-
Stage 1	-	-	-	-	-	-	569	694	-	689	-	-
Stage 2	-	-	-	-	-	-	513	644	-	735	-	-

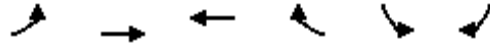
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			12.4			13.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	491	1242	-	-	891	-	-	413	-
HCM Lane V/C Ratio	0.011	-	-	-	0.004	-	-	0.011	-
HCM Control Delay (s)	12.4	0	-	-	9.1	-	-	13.8	0
HCM Lane LOS	B	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/11/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	100	592	332	440	401	78
Future Volume (vph)	100	592	332	440	401	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1845	3406	2733	3303	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	3406	2733	3303	1599
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	114	673	410	543	477	93
RTOR Reduction (vph)	0	0	0	149	0	58
Lane Group Flow (vph)	114	673	410	394	477	35
Heavy Vehicles (%)	3%	3%	6%	4%	6%	1%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.9	35.1	20.4	56.8	29.6	29.6
Effective Green, g (s)	7.9	35.1	20.4	56.8	29.6	29.6
Actuated g/C Ratio	0.10	0.45	0.26	0.73	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	176	827	887	1982	1248	604
v/s Ratio Prot	0.07	c0.36	0.12	0.14	c0.14	
v/s Ratio Perm						0.02
v/c Ratio	0.65	0.81	0.46	0.20	0.38	0.06
Uniform Delay, d1	33.9	18.8	24.3	3.4	17.7	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	6.2	0.4	0.0	0.9	0.2
Delay (s)	41.8	24.9	24.7	3.5	18.6	15.7
Level of Service	D	C	C	A	B	B
Approach Delay (s)		27.4	12.6		18.1	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	20.4
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/11/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	156	41	11	130	50	30	383	5	57	437	31
Future Volume (vph)	63	156	41	11	130	50	30	383	5	57	437	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1789		1421	1747		1597	1730		1736	1726	
Flt Permitted	0.61	1.00		0.58	1.00		0.16	1.00		0.41	1.00	
Satd. Flow (perm)	1055	1789		865	1747		273	1730		754	1726	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	83	205	54	14	167	64	32	403	5	80	615	44
RTOR Reduction (vph)	0	16	0	0	23	0	0	1	0	0	4	0
Lane Group Flow (vph)	83	243	0	14	208	0	32	407	0	80	655	0
Heavy Vehicles (%)	10%	1%	10%	27%	2%	10%	13%	9%	60%	4%	7%	37%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	439	745		360	727		113	720		314	719	
v/s Ratio Prot		c0.14			0.12			0.24			c0.38	
v/s Ratio Perm	0.08			0.02			0.12			0.11		
v/c Ratio	0.19	0.33		0.04	0.29		0.28	0.57		0.25	0.91	
Uniform Delay, d1	11.1	11.8		10.4	11.6		11.6	13.4		11.4	16.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	1.2		0.2	1.0		6.2	3.2		1.9	17.7	
Delay (s)	12.0	13.0		10.6	12.6		17.7	16.6		13.4	34.2	
Level of Service	B	B		B	B		B	B		B	C	
Approach Delay (s)		12.8			12.5			16.6			31.9	
Approach LOS		B			B			B			C	

Intersection Summary		
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.62	
Actuated Cycle Length (s)	60.0	Sum of lost time (s) 10.0
Intersection Capacity Utilization	68.9%	ICU Level of Service C
Analysis Period (min)	15	

c Critical Lane Group

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/11/2025

Intersection	
Intersection Delay, s/veh	35
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↶		↵	↶	↶	↵	↶		↵	↶	
Traffic Vol, veh/h	39	202	26	45	147	238	36	95	18	279	120	50
Future Vol, veh/h	39	202	26	45	147	238	36	95	18	279	120	50
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	3	1	0	0	0	5	3	0	0	5	0	4
Mvmt Flow	60	311	40	51	167	270	54	142	27	300	129	54
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	54.1	23.7	20.6	36.7
HCM LOS	F	C	C	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	84%	0%	89%	0%	100%	0%	0%	71%
Vol Right, %	0%	16%	0%	11%	0%	0%	100%	0%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	113	39	228	45	147	238	279	170
LT Vol	36	0	39	0	45	0	0	279	0
Through Vol	0	95	0	202	0	147	0	0	120
RT Vol	0	18	0	26	0	0	238	0	50
Lane Flow Rate	54	169	60	351	51	167	270	300	183
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.163	0.479	0.169	0.926	0.143	0.443	0.669	0.833	0.466
Departure Headway (Hd)	10.917	10.226	10.149	9.508	10.063	9.543	8.902	9.995	9.176
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	329	352	354	382	357	378	406	363	393
Service Time	8.677	7.985	7.887	7.246	7.801	7.28	6.64	7.733	6.914
HCM Lane V/C Ratio	0.164	0.48	0.169	0.919	0.143	0.442	0.665	0.826	0.466
HCM Control Delay	15.8	22.1	14.9	60.8	14.5	19.7	27.9	47.1	19.7
HCM Lane LOS	C	C	B	F	B	C	D	E	C
HCM 95th-tile Q	0.6	2.5	0.6	9.8	0.5	2.2	4.7	7.5	2.4

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/11/2025

Intersection

Int Delay, s/veh 3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	19	165	139	60	86	16
Future Vol, veh/h	19	165	139	60	86	16
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	1	0	0	1	0
Mvmt Flow	29	254	204	88	118	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	292	0	561
Stage 1	-	-	248
Stage 2	-	-	313
Critical Hdwy	4.1	-	6.41
Critical Hdwy Stg 1	-	-	5.41
Critical Hdwy Stg 2	-	-	5.41
Follow-up Hdwy	2.2	-	3.509
Pot Cap-1 Maneuver	1281	-	491
Stage 1	-	-	796
Stage 2	-	-	744
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1281	-	478
Mov Cap-2 Maneuver	-	-	478
Stage 1	-	-	775
Stage 2	-	-	744

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1281	-	-	-	510
HCM Lane V/C Ratio	0.023	-	-	-	0.274
HCM Control Delay (s)	7.9	-	-	-	14.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

HCM 6th TWSC
13: E Main Ave & West Driveway

12/11/2025

Intersection

Int Delay, s/veh 2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	26	210	144	47	67	35
Future Vol, veh/h	26	210	144	47	67	35
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	80	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	66	66	82	82	92	92
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	39	318	176	57	73	38

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	233	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	1346	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1346	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1346	-	-	-	552	870
HCM Lane V/C Ratio	0.029	-	-	-	0.132	0.044
HCM Control Delay (s)	7.8	-	-	-	12.5	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5	0.1

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/11/2025

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	243	87	8	173	60	8
Future Vol, veh/h	243	87	8	173	60	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	3	2	0	1	3	0
Mvmt Flow	352	126	11	231	92	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	478	0	668
Stage 1	-	-	-	-	415
Stage 2	-	-	-	-	253
Critical Hdwy	-	-	4.1	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.2	-	3.527
Pot Cap-1 Maneuver	-	-	1095	-	422
Stage 1	-	-	-	-	664
Stage 2	-	-	-	-	787
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1095	-	418
Mov Cap-2 Maneuver	-	-	-	-	418
Stage 1	-	-	-	-	664
Stage 2	-	-	-	-	779

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	436	-	-	1095	-
HCM Lane V/C Ratio	0.24	-	-	0.01	-
HCM Control Delay (s)	15.8	-	-	8.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/11/2025

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑↑	↑↑	
Traffic Vol, veh/h	6	11	10	376	445	3
Future Vol, veh/h	6	11	10	376	445	3
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	17	9	0	4	4	33
Mvmt Flow	9	17	12	453	473	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	726	238	476	0	-	0
Stage 1	475	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	7.14	7.08	4.1	-	-	-
Critical Hdwy Stg 1	6.14	-	-	-	-	-
Critical Hdwy Stg 2	6.14	-	-	-	-	-
Follow-up Hdwy	3.67	3.39	2.2	-	-	-
Pot Cap-1 Maneuver	329	742	1097	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	324	742	1097	-	-	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	542	-	-	-	-	-
Stage 2	725	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1097	-	324	742	-	-
HCM Lane V/C Ratio	0.011	-	0.028	0.023	-	-
HCM Control Delay (s)	8.3	-	16.4	10	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0.1	-	-

HCM 6th TWSC

14: Zeeland School Driveway/East Driveway & E Main Ave

12/11/2025

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	263	0	4	205	10	1	0	1	4	0	2
Future Vol, veh/h	4	263	0	4	205	10	1	0	1	4	0	2
Conflicting Peds, #/hr	1	0	1	0	0	0	10	0	10	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	50	-	100	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	92	92	82	82	92	92	92	65	92	65
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	6	405	0	4	250	12	1	0	1	6	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	406	0	0	694	689	416	687	-	261
Stage 1	-	-	-	-	-	-	418	418	-	259	-	-
Stage 2	-	-	-	-	-	-	276	271	-	428	-	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	-	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	-	3.3
Pot Cap-1 Maneuver	1313	-	-	1164	-	-	360	371	641	364	0	783
Stage 1	-	-	-	-	-	-	616	594	-	750	0	-
Stage 2	-	-	-	-	-	-	735	689	-	609	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1312	-	-	1163	-	-	353	367	634	357	-	775
Mov Cap-2 Maneuver	-	-	-	-	-	-	353	367	-	357	-	-
Stage 1	-	-	-	-	-	-	612	590	-	746	-	-
Stage 2	-	-	-	-	-	-	723	686	-	599	-	-

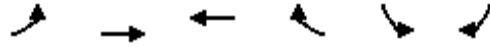
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			13			13.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	453	1312	-	-	1163	-	-	357	775
HCM Lane V/C Ratio	0.005	0.005	-	-	0.004	-	-	0.017	0.004
HCM Control Delay (s)	13	7.8	-	-	8.1	-	-	15.3	9.7
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1	0

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/12/2025



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↵	↑	↑↑	↵↵	↵↵	↵
Traffic Volume (vph)	88	333	497	240	496	70
Future Volume (vph)	88	333	497	240	496	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1671	1743	3343	2682	3213	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1671	1743	3343	2682	3213	1553
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	100	378	614	296	590	83
RTOR Reduction (vph)	0	0	0	79	0	52
Lane Group Flow (vph)	100	378	614	217	590	31
Heavy Vehicles (%)	8%	9%	8%	6%	9%	4%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.6	36.0	21.6	58.5	30.1	30.1
Effective Green, g (s)	7.6	36.0	21.6	58.5	30.1	30.1
Actuated g/C Ratio	0.10	0.45	0.27	0.73	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	159	787	906	1968	1213	586
v/s Ratio Prot	0.06	c0.22	c0.18	0.08	c0.18	
v/s Ratio Perm						0.02
v/c Ratio	0.63	0.48	0.68	0.11	0.49	0.05
Uniform Delay, d1	34.7	15.3	25.9	3.1	18.9	15.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.5	2.0	0.0	1.4	0.2
Delay (s)	42.3	15.8	28.0	3.1	20.3	15.9
Level of Service	D	B	C	A	C	B
Approach Delay (s)		21.3	19.9		19.8	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	79.7	Sum of lost time (s)	20.4
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/12/2025

Intersection

Int Delay, s/veh 6.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	163	55	29	237	140	11
Future Vol, veh/h	163	55	29	237	140	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	2	6	20	5	2	0
Mvmt Flow	236	80	39	316	215	17

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	316	0	670
Stage 1	-	-	-	-	276
Stage 2	-	-	-	-	394
Critical Hdwy	-	-	4.3	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.38	-	3.518
Pot Cap-1 Maneuver	-	-	1149	-	422
Stage 1	-	-	-	-	771
Stage 2	-	-	-	-	681
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1149	-	408
Mov Cap-2 Maneuver	-	-	-	-	408
Stage 1	-	-	-	-	771
Stage 2	-	-	-	-	658

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	23.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	422	-	-	1149	-
HCM Lane V/C Ratio	0.55	-	-	0.034	-
HCM Control Delay (s)	23.5	-	-	8.2	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.2	-	-	0.1	-

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/12/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	92	34	11	163	94	43	456	5	49	291	58
Future Volume (vph)	47	92	34	11	163	94	43	456	5	49	291	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	1.00		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1781		1805	1701		1503	1742		1770	1682	
Flt Permitted	0.50	1.00		0.65	1.00		0.33	1.00		0.33	1.00	
Satd. Flow (perm)	945	1781		1239	1701		515	1742		620	1682	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	62	121	45	14	209	121	45	480	5	69	410	82
RTOR Reduction (vph)	0	22	0	0	35	0	0	1	0	0	12	0
Lane Group Flow (vph)	62	144	0	14	295	0	45	484	0	69	480	0
Confl. Peds. (#/hr)							2		2			
Heavy Vehicles (%)	0%	1%	6%	0%	3%	10%	20%	9%	0%	2%	9%	16%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	393	742		516	708		214	725		258	700	
v/s Ratio Prot		0.08			c0.17			0.28			c0.29	
v/s Ratio Perm	0.07			0.01			0.09			0.11		
v/c Ratio	0.16	0.19		0.03	0.42		0.21	0.67		0.27	0.69	
Uniform Delay, d1	10.9	11.1		10.3	12.4		11.2	14.1		11.5	14.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	0.6		0.1	1.8		2.2	4.8		2.5	5.4	
Delay (s)	11.8	11.7		10.4	14.2		13.4	19.0		14.0	19.7	
Level of Service	B	B		B	B		B	B		B	B	
Approach Delay (s)		11.7			14.0			18.5			19.0	
Approach LOS		B			B			B			B	

Intersection Summary		
HCM 2000 Control Delay	16.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.55	B
Actuated Cycle Length (s)	60.0	Sum of lost time (s)
Intersection Capacity Utilization	66.9%	10.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		C

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/12/2025

Intersection	
Intersection Delay, s/veh	29.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷	↶	↶	↷		↶	↷	
Traffic Vol, veh/h	27	137	10	42	198	327	22	143	49	198	56	28
Future Vol, veh/h	27	137	10	42	198	327	22	143	49	198	56	28
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	19	7	0	0	3	15	0	0	0	16	4	16
Mvmt Flow	42	211	15	48	225	372	33	213	73	213	60	30
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	24.4	32.6	31	23.6
HCM LOS	C	D	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	74%	0%	93%	0%	100%	0%	0%	67%
Vol Right, %	0%	26%	0%	7%	0%	0%	100%	0%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	22	192	27	147	42	198	327	198	84
LT Vol	22	0	27	0	42	0	0	198	0
Through Vol	0	143	0	137	0	198	0	0	56
RT Vol	0	49	0	10	0	0	327	0	28
Lane Flow Rate	33	287	42	226	48	225	372	213	90
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.09	0.728	0.12	0.605	0.121	0.543	0.844	0.602	0.231
Departure Headway (Hd)	9.851	9.15	10.418	9.633	9.156	8.691	8.178	10.185	9.215
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	363	395	344	373	391	414	442	353	388
Service Time	7.631	6.929	8.203	7.417	6.929	6.464	5.951	7.97	7
HCM Lane V/C Ratio	0.091	0.727	0.122	0.606	0.123	0.543	0.842	0.603	0.232
HCM Control Delay	13.6	33	14.6	26.2	13.2	21.4	41.9	27.3	14.8
HCM Lane LOS	B	D	B	D	B	C	E	D	B
HCM 95th-tile Q	0.3	5.6	0.4	3.8	0.4	3.1	8.2	3.7	0.9

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/12/2025

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	90	120	152	115	50	30
Future Vol, veh/h	90	120	152	115	50	30
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	0	2	3	5	0
Mvmt Flow	138	185	224	169	68	41

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	393	0	-	0	771
Stage 1	-	-	-	-	309
Stage 2	-	-	-	-	462
Critical Hdwy	4.1	-	-	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	2.2	-	-	-	3.545
Pot Cap-1 Maneuver	1177	-	-	-	364
Stage 1	-	-	-	-	738
Stage 2	-	-	-	-	628
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1177	-	-	-	316
Mov Cap-2 Maneuver	-	-	-	-	316
Stage 1	-	-	-	-	641
Stage 2	-	-	-	-	628

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1177	-	-	-	402
HCM Lane V/C Ratio	0.118	-	-	-	0.273
HCM Control Delay (s)	8.5	-	-	-	17.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.1

HCM Unsignalized Intersection Capacity Analysis

12: N Carlton St & Proposed Truck Entrance

12/12/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑			↑
Traffic Volume (veh/h)	0	0	136	0	14	55
Future Volume (Veh/h)	0	0	136	0	14	55
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	148	0	15	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	148			148	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	148			148	
tC, single (s)	6.4	6.2			5.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			3.1	
p0 queue free %	100	100			99	
cM capacity (veh/h)	739	899			1003	
Direction, Lane #						
	NB 1	SB 1				
Volume Total	148	75				
Volume Left	0	15				
Volume Right	0	0				
cSH	1700	1003				
Volume to Capacity	0.09	0.01				
Queue Length 95th (ft)	0	1				
Control Delay (s)	0.0	1.8				
Lane LOS			A			
Approach Delay (s)	0.0	1.8				
Approach LOS						
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			17.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 6th TWSC
23: N Carlton St & Proposed Staff Entrance

12/12/2025

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	3	136	69	15	55
Future Vol, veh/h	11	3	136	69	15	55
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	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	3	148	75	16	60

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	278	186	0	0	223
Stage 1	186	-	-	-	-
Stage 2	92	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	712	856	-	-	1346
Stage 1	846	-	-	-	-
Stage 2	932	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	703	856	-	-	1346
Mov Cap-2 Maneuver	703	-	-	-	-
Stage 1	846	-	-	-	-
Stage 2	921	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	703	856	1346
HCM Lane V/C Ratio	-	-	0.017	0.004	0.012
HCM Control Delay (s)	-	-	10.2	9.2	7.7
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	0

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/12/2025

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘	↗		↑↑	↑↑	
Traffic Vol, veh/h	3	9	0	496	290	0
Future Vol, veh/h	3	9	0	496	290	0
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	100	22	33	10	13	50
Mvmt Flow	5	14	0	598	309	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	608	155	-	0	-	0
Stage 1	309	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	8.8	7.34	-	-	-	-
Critical Hdwy Stg 1	7.8	-	-	-	-	-
Critical Hdwy Stg 2	7.8	-	-	-	-	-
Follow-up Hdwy	4.5	3.52	-	-	-	-
Pot Cap-1 Maneuver	258	804	0	-	-	0
Stage 1	494	-	0	-	-	0
Stage 2	502	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	258	804	-	-	-	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	502	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	258	804	-
HCM Lane V/C Ratio	-	0.018	0.017	-
HCM Control Delay (s)	-	19.2	9.6	-
HCM Lane LOS	-	C	A	-
HCM 95th %tile Q(veh)	-	0.1	0.1	-

HCM 6th TWSC
14: Zeeland School Driveway & E Main Ave

12/12/2025

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	4	3	250	1	4
Future Vol, veh/h	171	4	3	250	1	4
Conflicting Peds, #/hr	0	0	0	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	92	92	82	92	92
Heavy Vehicles, %	1	50	100	4	100	100
Mvmt Flow	263	4	3	305	1	4

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	267	0	578
Stage 1	-	-	-	-	265
Stage 2	-	-	-	-	313
Critical Hdwy	-	-	5.1	-	7.4
Critical Hdwy Stg 1	-	-	-	-	6.4
Critical Hdwy Stg 2	-	-	-	-	6.4
Follow-up Hdwy	-	-	3.1	-	4.4
Pot Cap-1 Maneuver	-	-	891	-	348
Stage 1	-	-	-	-	598
Stage 2	-	-	-	-	564
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	891	-	346
Mov Cap-2 Maneuver	-	-	-	-	422
Stage 1	-	-	-	-	598
Stage 2	-	-	-	-	561

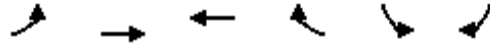
Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	542	-	-	891	-
HCM Lane V/C Ratio	0.01	-	-	0.004	-
HCM Control Delay (s)	11.7	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM Signalized Intersection Capacity Analysis

4: E Main Ave & M-121 (Chicago Dr)

12/12/2025



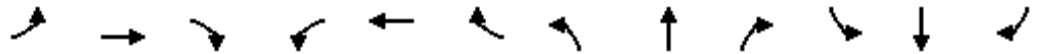
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷	↶↷	↶↷	↷
Traffic Volume (vph)	100	592	332	440	401	78
Future Volume (vph)	100	592	332	440	401	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	1.00	1.00	0.95	0.88	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1752	1845	3406	2733	3303	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1752	1845	3406	2733	3303	1599
Peak-hour factor, PHF	0.88	0.88	0.81	0.81	0.84	0.84
Adj. Flow (vph)	114	673	410	543	477	93
RTOR Reduction (vph)	0	0	0	149	0	58
Lane Group Flow (vph)	114	673	410	394	477	35
Heavy Vehicles (%)	3%	3%	6%	4%	6%	1%
Turn Type	Prot	NA	NA	pt+ov	Prot	Perm
Protected Phases	7	4	8	8 2	2	
Permitted Phases						2
Actuated Green, G (s)	7.9	35.1	20.4	56.8	29.6	29.6
Effective Green, g (s)	7.9	35.1	20.4	56.8	29.6	29.6
Actuated g/C Ratio	0.10	0.45	0.26	0.73	0.38	0.38
Clearance Time (s)	6.8	6.8	6.8		6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	176	827	887	1982	1248	604
v/s Ratio Prot	0.07	c0.36	0.12	0.14	c0.14	
v/s Ratio Perm						0.02
v/c Ratio	0.65	0.81	0.46	0.20	0.38	0.06
Uniform Delay, d1	33.9	18.8	24.3	3.4	17.7	15.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	6.2	0.4	0.0	0.9	0.2
Delay (s)	41.8	24.9	24.7	3.5	18.6	15.7
Level of Service	D	C	C	A	B	B
Approach Delay (s)		27.4	12.6		18.1	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	78.3	Sum of lost time (s)	20.4
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

6: N Fairview Rd & E Washington Ave

12/12/2025



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	156	41	11	130	50	40	374	5	57	424	47
Future Volume (vph)	72	156	41	11	130	50	40	374	5	57	424	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.96		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1641	1789		1421	1747		1596	1729		1736	1702	
Flt Permitted	0.61	1.00		0.58	1.00		0.16	1.00		0.42	1.00	
Satd. Flow (perm)	1055	1789		865	1747		269	1729		771	1702	
Peak-hour factor, PHF	0.76	0.76	0.76	0.78	0.78	0.78	0.95	0.95	0.95	0.71	0.71	0.71
Adj. Flow (vph)	95	205	54	14	167	64	42	394	5	80	597	66
RTOR Reduction (vph)	0	16	0	0	23	0	0	1	0	0	6	0
Lane Group Flow (vph)	95	243	0	14	208	0	42	398	0	80	657	0
Confl. Peds. (#/hr)							2		2			
Heavy Vehicles (%)	10%	1%	10%	27%	2%	10%	13%	9%	60%	4%	7%	37%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Effective Green, g (s)	25.0	25.0		25.0	25.0		25.0	25.0		25.0	25.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.42	0.42		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	439	745		360	727		112	720		321	709	
v/s Ratio Prot		c0.14			0.12			0.23			c0.39	
v/s Ratio Perm	0.09			0.02			0.16			0.10		
v/c Ratio	0.22	0.33		0.04	0.29		0.38	0.55		0.25	0.93	
Uniform Delay, d1	11.2	11.8		10.4	11.6		12.1	13.3		11.4	16.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	1.2		0.2	1.0		9.3	3.1		1.9	19.9	
Delay (s)	12.3	13.0		10.6	12.6		21.4	16.3		13.2	36.5	
Level of Service	B	B		B	B		C	B		B	D	
Approach Delay (s)		12.8			12.5			16.8			34.0	
Approach LOS		B			B			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.6				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			60.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			69.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th AWSC
3: N Fairview Rd & E Main Ave

12/12/2025

Intersection	
Intersection Delay, s/veh	34.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵		↵	↵	↵	↵	↵		↵	↵	
Traffic Vol, veh/h	30	202	26	45	147	238	36	95	18	279	120	37
Future Vol, veh/h	30	202	26	45	147	238	36	95	18	279	120	37
Peak Hour Factor	0.65	0.65	0.65	0.88	0.88	0.88	0.67	0.67	0.67	0.93	0.93	0.93
Heavy Vehicles, %	3	1	0	0	0	5	3	0	0	5	0	4
Mvmt Flow	46	311	40	51	167	270	54	142	27	300	129	40
Number of Lanes	1	1	0	1	1	1	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	3	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	3
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	3	2
HCM Control Delay	53.7	23.1	20.2	36
HCM LOS	F	C	C	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	0%	100%	0%
Vol Thru, %	0%	84%	0%	89%	0%	100%	0%	0%	76%
Vol Right, %	0%	16%	0%	11%	0%	0%	100%	0%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	36	113	30	228	45	147	238	279	157
LT Vol	36	0	30	0	45	0	0	279	0
Through Vol	0	95	0	202	0	147	0	0	120
RT Vol	0	18	0	26	0	0	238	0	37
Lane Flow Rate	54	169	46	351	51	167	270	300	169
Geometry Grp	6	6	6	6	6	6	6	6	6
Degree of Util (X)	0.161	0.473	0.129	0.918	0.141	0.438	0.661	0.826	0.428
Departure Headway (Hd)	10.795	10.104	10.066	9.426	9.952	9.432	8.792	9.912	9.136
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	333	358	357	386	361	383	411	366	395
Service Time	8.554	7.863	7.803	7.163	7.689	7.168	6.528	7.65	6.874
HCM Lane V/C Ratio	0.162	0.472	0.129	0.909	0.141	0.436	0.657	0.82	0.428
HCM Control Delay	15.6	21.7	14.3	58.9	14.3	19.3	27.1	45.8	18.6
HCM Lane LOS	C	C	B	F	B	C	D	E	C
HCM 95th-tile Q	0.6	2.4	0.4	9.7	0.5	2.2	4.6	7.4	2.1

HCM 6th TWSC
10: E Main Ave & N Carlton St

12/12/2025

Intersection						
Int Delay, s/veh	6.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	
Traffic Vol, veh/h	39	145	139	104	139	48
Future Vol, veh/h	39	145	139	104	139	48
Conflicting Peds, #/hr	0	0	0	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	65	65	68	68	73	73
Heavy Vehicles, %	0	1	0	0	1	0
Mvmt Flow	60	223	204	153	190	66

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	357	0	-	0	625 282
Stage 1	-	-	-	-	281 -
Stage 2	-	-	-	-	344 -
Critical Hdwy	4.1	-	-	-	6.41 6.2
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.2	-	-	-	3.509 3.3
Pot Cap-1 Maneuver	1213	-	-	-	450 762
Stage 1	-	-	-	-	769 -
Stage 2	-	-	-	-	720 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1213	-	-	-	425 761
Mov Cap-2 Maneuver	-	-	-	-	425 -
Stage 1	-	-	-	-	726 -
Stage 2	-	-	-	-	720 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1213	-	-	-	479
HCM Lane V/C Ratio	0.049	-	-	-	0.535
HCM Control Delay (s)	8.1	-	-	-	20.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.1

HCM Unsignalized Intersection Capacity Analysis

12: N Carlton St & Proposed Truck Entrance

12/12/2025



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑			↗
Traffic Volume (veh/h)	0	0	79	0	13	94
Future Volume (Veh/h)	0	0	79	0	13	94
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	86	0	14	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	216	86			86	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	86			86	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	765	973			1510	
Direction, Lane #	NB 1	SB 1				
Volume Total	86	116				
Volume Left	0	14				
Volume Right	0	0				
cSH	1700	1510				
Volume to Capacity	0.05	0.01				
Queue Length 95th (ft)	0	1				
Control Delay (s)	0.0	1.0				
Lane LOS		A				
Approach Delay (s)	0.0	1.0				
Approach LOS						
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			15.7%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM 6th TWSC
23: N Carlton St & Proposed Staff Entrance

12/12/2025

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑			↖
Traffic Vol, veh/h	85	23	79	64	23	71
Future Vol, veh/h	85	23	79	64	23	71
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	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	92	25	86	70	25	77

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	248	121	0	0	156	0
Stage 1	121	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	740	930	-	-	1424	-
Stage 1	904	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	727	930	-	-	1424	-
Mov Cap-2 Maneuver	727	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	727	930	1424
HCM Lane V/C Ratio	-	-	0.127	0.027	0.018
HCM Control Delay (s)	-	-	10.7	9	7.6
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	0.1

HCM 6th TWSC
11: N Carlton St & E Washington Ave

12/12/2025

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	243	87	34	173	74	17
Future Vol, veh/h	243	87	34	173	74	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	75	75	65	65
Heavy Vehicles, %	3	2	0	1	3	0
Mvmt Flow	352	126	45	231	114	26

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	478	0	736
Stage 1	-	-	-	-	415
Stage 2	-	-	-	-	321
Critical Hdwy	-	-	4.1	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.2	-	3.527
Pot Cap-1 Maneuver	-	-	1095	-	385
Stage 1	-	-	-	-	664
Stage 2	-	-	-	-	733
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1095	-	369
Mov Cap-2 Maneuver	-	-	-	-	369
Stage 1	-	-	-	-	664
Stage 2	-	-	-	-	703

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	401	-	-	1095	-
HCM Lane V/C Ratio	0.349	-	-	0.041	-
HCM Control Delay (s)	18.7	-	-	8.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0.1	-

HCM 6th TWSC
17: N Fairview Rd & Driveway

12/12/2025

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑↑	↑↑	
Traffic Vol, veh/h	6	11	0	367	432	0
Future Vol, veh/h	6	11	0	367	432	0
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	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	83	83	94	94
Heavy Vehicles, %	17	9	0	4	4	33
Mvmt Flow	9	17	0	442	460	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	681	230	0
Stage 1	460	-	-
Stage 2	221	-	-
Critical Hdwy	7.14	7.08	-
Critical Hdwy Stg 1	6.14	-	-
Critical Hdwy Stg 2	6.14	-	-
Follow-up Hdwy	3.67	3.39	-
Pot Cap-1 Maneuver	352	751	0
Stage 1	561	-	0
Stage 2	752	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	352	751	-
Mov Cap-2 Maneuver	352	-	-
Stage 1	561	-	-
Stage 2	752	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	352	751	-
HCM Lane V/C Ratio	-	0.026	0.023	-
HCM Control Delay (s)	-	15.5	9.9	-
HCM Lane LOS	-	C	A	-
HCM 95th %tile Q(veh)	-	0.1	0.1	-

HCM 6th TWSC
14: Zeeland School Driveway & E Main Ave

12/12/2025

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	312	0	4	202	1	1
Future Vol, veh/h	312	0	4	202	1	1
Conflicting Peds, #/hr	0	1	0	0	10	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	92	92	82	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	480	0	4	246	1	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	481	0	745	491
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	264	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1092	-	384	582
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	785	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1091	-	378	576
Mov Cap-2 Maneuver	-	-	-	-	484	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	775	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	11.9			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	526	-	-	1091	-	
HCM Lane V/C Ratio	0.004	-	-	0.004	-	
HCM Control Delay (s)	11.9	-	-	8.3	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	