

MEMO

VIA EMAIL JGray@jonesville.org

To: Mr. Jeffery M Gray
City Manager, Jonesville, MI

From: Jacob Swanson, PE
Trevor Boer, EIT
Fleis & VandenBrink

Date: Revised October 23, 2023

Re: Chicago Street (US-12), Road Diet Study
City of Jonesville, Michigan

1 INTRODUCTION

This memorandum presents the results of the Road Diet Traffic Study for the West Chicago Street (US-12) corridor through the City of Jonesville, Michigan. The City of Jonesville is considering a road diet through restriping the existing five-lane sections of the West Chicago Street (US-12) corridor, between Walnut Street / Olds Street (M-99) on the west end and the existing three-lane section on the east end; the project limits are shown on **Figure 1**. The proposed road diet will reduce the roadway width to provide one-lane in each direction and maintain the existing two-way center left-turn lane (TWLTL). The primary goal of the proposed road diet is to improve safety for pedestrians and vehicles by reducing the crossing distance and reducing vehicle speeds by eliminating excess roadway capacity. Roadway information is summarized in **Table 1**. Additionally, F&V collected an inventory of existing lane use and traffic controls, as shown on the attached **Figure 2** and obtained existing traffic signal timing information from MDOT.

Table 1: Existing Roadway Information

	Chicago Street Corridor
Lane	5-lane (2 lanes each direction and TWLTL)
Average Daily Traffic (2019)	14,400 vpd
Functional Classification	Other Principal Arterial
Posted Speed Limit	30 mph

This study has been completed to examine the traffic operations and capacity, safety, and geometric needs of the corridor, including the following study intersections on West Chicago Street (US-12):

1. Walnut Street / Olds Street (M-99)
2. Water Street / West Street
3. Maumee Street / Evans Street (M-99)
4. East Street / Wright Street
5. Middle School Drive

The study includes the evaluation of the existing intersections operations and recommendations, including safety improvements, signal timing optimization along West Chicago Street (US-12), geometric improvements, and other measures that would be effective in improving the operations along the roadway corridor. The study analyses were completed using Synchro and SimTraffic (Version 11).

The study includes the evaluation of the following analysis scenarios:

Section 3: Baseline Conditions 2022

1. Existing Geometry (5-Lanes)
2. Road Diet (3-Lanes)
3. Road Diet (3-Lanes) with Improvements

Section 4: Horizon Year Conditions 2042

1. Existing Geometry (5-Lanes)
2. Road Diet (3-Lanes)
3. Road Diet (3-Lanes) with Improvements

2 DATA COLLECTION

The existing weekday turning movement traffic volume data were collected by F&V subconsultant Gewalt Hamilton Associates (GHA) on Thursday, March 17, 2022. Intersection Turning Movement Counts (TMC) were collected during the weekday AM (7:00 AM to 9:00 AM), MD (11:00 AM to 1:00 PM) and PM (2:00 PM to 6:00 PM) peak periods at all study intersections. The data collection included Peak Hour Factors (PHFs), pedestrian volumes, and commercial truck percentages which were used in the analysis in accordance with MDOT Electronic Traffic Control Device Guidelines. Peak hours at each intersection were utilized and through volumes were carried along the main study roadways and were balanced to determine the volumes at the site driveways in accordance with MDOT guidelines.

Due to the impact of COVID-19 and the subsequent closure of businesses and schools, current traffic volume data is not representative of “typical” operations. Therefore, historical traffic volume data was reviewed, and adjustment factors were determined to calculate baseline existing 2022 traffic volumes. A growth rate was applied to the historic volumes to calculate the *expected* 2022 traffic volumes. These were compared to the turning movement counts *collected*. The difference in the *expected* to the *collected* traffic counts is the COVID adjustment factor. The traffic volumes were then calculated by following the following process:

1. The existing 2022 peak hour traffic counts per intersection were identified
2. Peak hour COVID adjustments were applied to the raw data
3. The adjusted traffic volumes were then balanced to determine the balanced and COVID adjusted volumes used in the study.

COVID adjustment factors for the study roadway network are summarized in **Table 1** and the raw traffic volume data are attached. The baseline existing 2022 peak hour traffic volumes utilized in the study analyses are shown on the attached **Figure 3**.

Table 1: COVID Traffic Volume Adjustment Factors

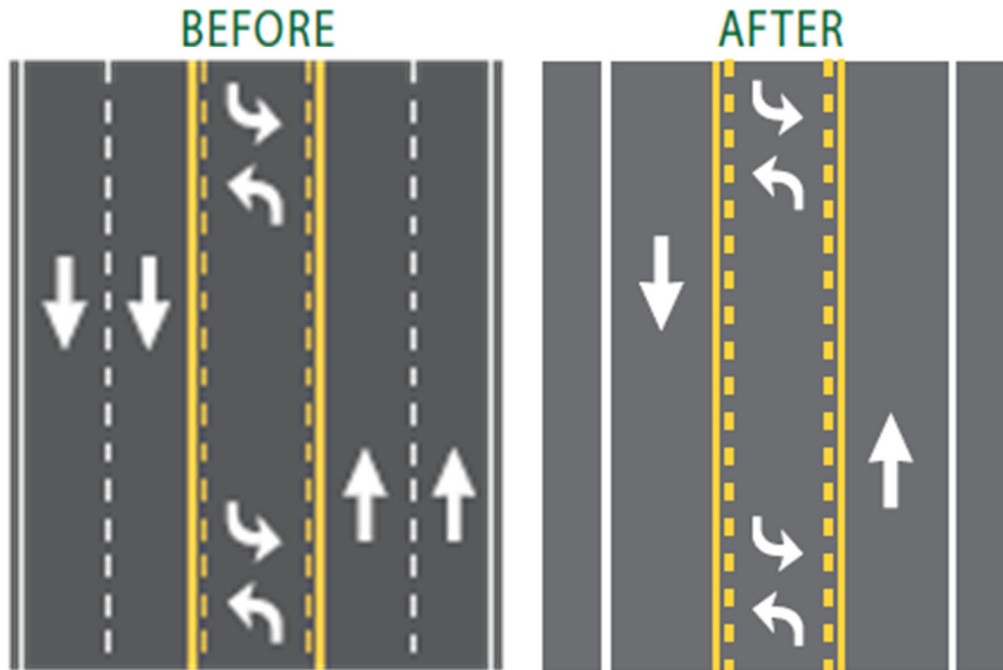
COVID Adjustment Factors	
AM	13%
MD	10%
PM	10%

3 BASELINE CONDITIONS (2022) ANALYSIS

The City of Jonesville is considering a road diet of the existing five-lane section of the West Chicago Street (US-12) corridor, between Walnut Street / Olds Street (M-99) to the west and the existing three-lane section to the east, as shown on the attached **Figure 1**. The proposed road diet will convert the existing five-lane section of West Chicago Street (US-12) into a three-lane roadway throughout the study corridor, with one (1) lane in each direction and a center two-way left-turn lane (TWLTL), as shown below in **Exhibit 1**.

Additionally, the roadway cross-section width that will be eliminated with the road diet and removal of the outside through lanes, between Walnut Street / Old Street (M-99) and the existing three-lane cross-section, is proposed to be converted to provide buffered bike lanes on both sides of the roadway.

Exhibit 1: West Chicago Street (US-12) – Roadway Cross-section



3.1 EXISTING GEOMETRY (5-LANES)

Analysis was performed to evaluate both the existing geometry and the proposed road diet geometry, with the existing 2022 traffic volumes. The peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro (Version 11) traffic analysis software and the methodologies presented in the *Highway Capacity Manual 6th, Edition* (HCM6). These analyses were performed based on the existing lane use and traffic control shown on the attached **Figure 2** and based on the proposed road diet geometry of reducing one (1) through lane in each direction. The existing peak hour traffic volumes used in the analysis are shown on the attached **Figure 3**.

Descriptions of LOS “A” through “F” as defined in the HCM6, are attached. Typically, LOS D is considered acceptable, with LOS A representing minimal delay and LOS F indicating failing conditions. SimTraffic network simulations were also reviewed to evaluate network operations and vehicle queueing throughout the study roadway network, as well as SimTraffic microsimulation projected delays. The results of the existing geometry analyses are attached and summarized in **Table 2**.

The results of the existing conditions analysis indicates that all approaches and movements at the study intersections are currently operating acceptably, at a LOS D or better during all peak periods (AM, MD, & PM) analyzed, with the exception of the following:

Walnut Street / Olds Street (M-99)

- The westbound through movement is currently operating at LOS F during the AM peak hour.

Although the Synchro intersection LOS analysis indicates poor operations during the AM peak hour, review of SimTraffic network simulation indicates generally acceptable operations throughout the study roadway network. The majority of vehicles were observed to be serviced within each cycle length; any persisting vehicle queues were observed to dissipate and were not present throughout the peak periods.

3.2 ROAD DIET (3-LANES)

The results of the road diet geometry analyses are attached and summarized in **Table 2**. The road diet geometry was compared to the existing geometry to determine what (if any) mitigation measures would be necessary to accommodate the road diet with the existing 2022 traffic volumes. The results of the analysis indicate that all study intersection approaches and movements currently operate acceptably, at a LOS D or better during all peak periods (AM, MD, & PM) analyzed, and are expected to continue operating acceptably with the implementation of the proposed road diet, with the exception of the following:

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The eastbound shared through/right movement is expected to operate at LOS F during both the AM and PM peak hours.
- The westbound through movements are expected to operate at LOS F during the AM peak hour.

Chicago Street (US-12) & East Street / Wright Street

- The southbound approach is expected to operate at LOS E during the AM peak hour. Review of this intersection approach indicates delays during the AM peak hour, due to school traffic.

It should be noted that, with the implementation of a road diet along the study corridor, side street delays are expected to increase.

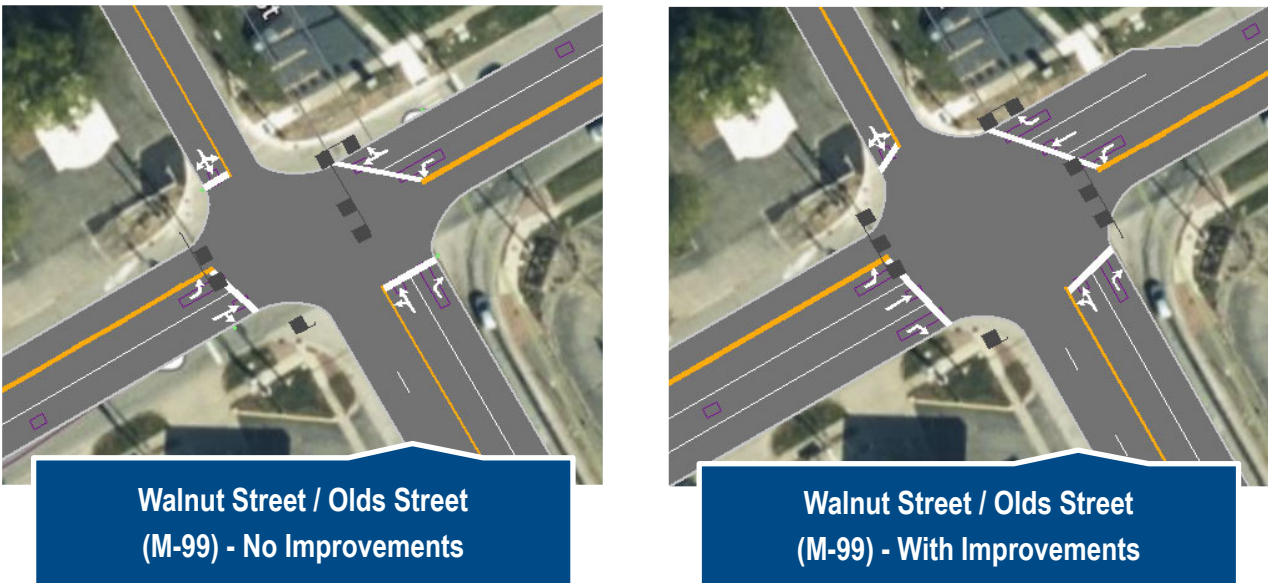
3.3 ROAD DIET WITH IMPROVEMENTS (3-LANES)

Mitigation measures were reviewed with the addition of the road diet, in order to improve the operations at Walnut Street / Olds Street (M-99). The recommended mitigation measures include the following.

- Signal timing optimization
- Restripe the eastbound and westbound approaches to provide exclusive right-turn lanes.

The recommended intersection geometry is shown below in **Exhibit 2**. Additionally, the recommended corridor intersection geometry is shown on the attached **Figure 4**.

Exhibit 2: Intersection Geometry – West Chicago Street (US-12) & Walnut Street / Old Street (M-99)



The results of the road diet geometry, with the implementation of the recommended improvements, are attached and summarized in **Table 3**. The results of the road diet (2022) with improvements analysis indicates that multiple study intersection approaches and movements at Chicago Street (US-12) & Walnut Street / Olds Street (M-99) will experience reductions in delay and improved LOS. Additionally, with the improvements implemented, all intersection approaches and movements are expected to operate acceptably, at a LOS D or better during all peak periods (AM, MD, & PM) analyzed, with the exception of the following:

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The eastbound through movement is expected to operate at LOS E during the AM peak hour.

Table 2: Baseline Conditions (2022) Intersection Operations

West Chicago Street (US-12) Intersections	Control	Approach	Existing Geometry (5-Lanes)						Road Diet (3-Lanes)						Difference					
			AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Walnut Street / Olds Street (M-99)	Signalized	EBL	0.0*	A	12.7	B	14.2	B	0.0*	A	12.7	B	14.3	B	N/A		0.0	-	0.1	-
		EBTR	52.8	D	27.0	C	39.2	D	319.7	F	39.6	D	213.2	F	266.9	D→F	12.6	C→D	174.0	D→F
		WBL	23.1	C	14.8	B	24.4	C	24.6	C	16.8	B	26.8	C	1.5	-	2.0	-	2.4	-
		WBTR	130.6	F	34.9	C	46.9	D	128.7	F	34.5	C	46.7	D	-1.9	-	-0.4	-	-0.2	-
		NBL	29.0	C	27.8	C	26.1	C	29.0	C	27.8	C	26.1	C	0.0	-	0.0	-	0.0	-
		NBR	14.6	B	26.2	C	47.1	D	14.6	B	26.1	C	46.2	D	0.0	-	-0.1	-	-0.9	-
		SB	42.5	D	50.1	D	48.3	D	42.6	D	50.0	D	48.3	D	0.1	-	-0.1	-	0.0	-
Overall	49.2	D	24.8	C	39.0	D	113.4	F	27.2	C	78.7	E	64.2	D→F	2.4	-	39.7	D→E		
2 Water Street / West Street	Signalized	EBL	0.2	A	0.1	A	0.5	A	0.2	A	0.1	A	0.1	A	0.0	-	0.0	-	-0.4	-
		EBTR	0.6	A	0.5	A	0.8	A	1.7	A	1.4	A	1.6	A	1.1	-	0.9	-	0.8	-
		WBL	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.1	A	0.0	-	0.0	-	0.0	-
		WBTR	0.7	A	0.4	A	0.4	A	1.6	A	0.8	A	1.0	A	0.9	-	0.4	-	0.6	-
		NB	29.1	C	28.5	C	28.7	C	29.1	C	28.5	C	28.7	C	0.0	-	0.0	-	0.0	-
		SB	26.3	C	26.4	C	27.7	C	26.4	C	26.4	C	27.7	C	0.1	-	0.0	-	0.0	-
Overall	5.3	A	4.5	A	3.0	A	6.1	A	5.1	A	3.5	A	0.8	-	0.6	-	0.5	-		
3 Maumee Street / Evans Street (M-99)	Signalized	EBL	2.2	A	0.6	A	1.4	A	6.6	A	0.9	A	2.6	A	4.4	-	0.3	-	1.2	-
		EBTR	1.0	A	0.5	A	0.8	A	2.5	A	1.0	A	2.1	A	1.5	-	0.5	-	1.3	-
		WBL	10.6	B	4.0	A	6.1	A	10.6	B	4.0	A	6.1	A	0.0	-	0.0	-	0.0	-
		WBTR	10.8	B	4.4	A	6.8	A	15.1	B	5.4	A	8.6	A	4.3	-	1.0	-	1.8	-
		NB	21.3	C	25.3	C	22.9	C	21.3	C	25.3	C	22.9	C	0.0	-	0.0	-	0.0	-
		SB	26.2	C	27.9	C	26.0	C	26.2	C	28.0	C	26.0	C	0.0	-	0.1	-	0.0	-
Overall	12.7	B	7.6	A	9.4	A	14.5	B	8.1	A	10.4	B	1.8	-	0.5	-	1.0	A→B		
4 East Street / Wright Street	Stop (Minor)	EBL	9.5	A	8.6	A	8.6	A	9.3	A	8.5	A	8.5	A	-0.2	-	-0.1	-	-0.1	-
		WBL	9.0	A	8.6	A	9.1	A	8.9	A	8.5	A	9.1	A	-0.1	-	-0.1	-	0.0	-
		NB	18.1	C	15.1	C	22.7	C	22.0	C	17.9	C	28.4	D	3.9	-	2.8	-	5.7	C→D
		SB	28.3	D	16.0	C	26.7	D	37.7	E	19.4	C	35.7	D	9.4	D→E	3.4	-	9.0	-
5 Middle School Drive	Stop (Minor)	EBL	9.6	A	8.2	A	8.4	A	9.5	A	8.2	A	8.4	A	-0.1	-	0.0	-	0.0	-
		WB	Free						Free						N/A					
		SB	18.0	C	10.4	B	11.8	B	16.1	C	10.4	B	12.4	B	-1.9	-	0.0	-	0.6	-

* Indicates no vehicle volume present

Table 3: Road Diet (2022) w/ Improvements – Intersection Operations

Intersection	Control	Approach	Road Diet (3-Lanes)						Road Diet (3-Lanes) w/ Improvements						Difference					
			AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Chicago Street & Walnut Street / Olds Street (M-99)	Signal	EBL	0.0*	A	12.7	B	14.3	B	0.0*	A	12.7	B	16.0	B	N/A		0.0	-	1.7	-
		EBT	319.7	F	39.6	D	213.2	F	76.7	E	31.3	C	52.8	D	-243.0	F→E	-8.3	D→C	-160.4	F→D
		EBR	319.7	F	39.6	D	213.2	F	27.2	C	23.6	C	23.7	C	-292.5	F→C	-16.0	D→C	-189.5	F→C
		WBL	24.6	C	16.8	B	26.8	C	28.5	C	15.8	B	14.9	B	3.9	-	-1.0	-	-11.9	C→B
		WBT	128.7	F	34.5	C	46.7	D	8.8	A	34.5	C	12.5	B	-119.9	F→A	0.0	-	-34.2	D→B
		WBR	128.7	F	34.5	C	46.7	D	6.6	A	21.6	C	9.8	A	-122.1	F→A	-12.9	-	-36.9	D→A
		NBL	29.0	C	27.8	C	26.1	C	34.2	C	27.8	C	30.3	C	5.2	-	0.0	-	4.2	-
		NBR	14.6	B	26.1	C	46.2	D	17.2	B	26.1	C	30.9	C	2.6	-	0.0	-	-15.3	D→C
		SB	42.6	D	50.0	D	48.3	D	48.5	D	50.0	D	51.0	D	5.9	-	0.0	-	2.7	-
Overall	113.4	F	27.2	C	78.7	E	32.9	C	25.4	C	28.4	C	-80.5	F→C	1.2	-	-50.3	E→C		

* Indicates no vehicle volume present

4 HORIZON YEAR (2042) ANALYSIS

Projected population growth rates for Hillsdale County, MI published by the Michigan Department of Technology, Management & Budget (DTMB) were used to calculate an annual background growth rate of 0.28%. Additionally, MDOT Planning provided a background growth rate of 0.2063% for the study corridor; however, the higher growth rate provided by DTMB was utilized for this study, as it provides a more conservative analysis. This background growth rate was applied to the existing 2022 traffic volumes to forecast the Horizon Year (2042) traffic volumes, as shown in the attached **Figure 5**.

4.1 EXISTING GEOMETRY (5-LANES)

The results of the existing geometry (horizon year 2042) analyses are attached and summarized in **Table 4** and indicate that all study intersection approaches and movements are expected to operate acceptably, at LOS D or better during all peak periods (AM, MD, & PM) analyzed, with the exception of the following:

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The westbound through movement is expected to operate at LOS F during the AM peak hour. Additionally, the eastbound through and right-turn movements are expected to operate at LOS E.
- The northbound right-turn movement is expected to operate at LOS F during the PM peak hour.

4.2 ROAD DIET (3-LANES)

The results of the road diet geometry analyses are attached and summarized in **Table 4**. The road diet geometry was compared to the existing geometry to determine what (if any) mitigation measures would be necessary to accommodate the road diet with the horizon year (2042) traffic volumes. The results of the analysis indicate that most study intersection approaches and movements are expected to operate acceptably at a LOS D or better during all peak periods (AM, MD, & PM) analyzed and are expected to continue operating acceptably with the implementation of the proposed road diet, with the exception of the following.

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The eastbound shared through/right movement is expected to operate at LOS F during both the AM and PM peak hours.
- The westbound through movement is expected to operate at LOS F during the AM peak hour.
- The northbound right-turn movement is expected to operate at LOS F during the PM peak hour.

Chicago Street (US-12) & East Street / Wright Street

- The southbound approach is expected to operate at LOS F and LOS E during the AM and PM peak periods, respectively. Review of this intersection approach indicates delays during the AM peak hour, due to school traffic.

4.3 ROAD DIET WITH IMPROVEMENTS (3-LANES)

Mitigation measures were reviewed with the addition of the road diet, in order to improve the operations at Walnut Street / Olds Street (M-99). The recommended mitigation measures include the following.

- Signal timing optimization
- Restripe the eastbound and westbound approaches to provide an exclusive right-turn lanes.

The recommended corridor intersection geometry is shown on the attached **Figure 4**.

The results of the road diet geometry, with the implementation of the recommended improvements, are attached and summarized in **Table 5**. The results of the road diet (horizon year 2042) with improvements analysis indicates that multiple study intersection approaches and movements at Chicago Street (US-12) & Walnut Street / Olds Street (M-99) will experience reductions in delay and improved LOS. Additionally, with the improvements implemented, all intersection approaches and movements are expected to operate acceptably, at a LOS D or better during all peak periods (AM, MD, & PM) analyzed, with the exception of the following:

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The eastbound through movement is expected to operate at LOS F during the AM peak hour.

Table 4: Horizon Year (2042) Intersection Operations

West Chicago Street (US-12) Intersections	Control	Approach	Existing Geometry (5-Lanes)						Road Diet (3-Lanes)						Difference					
			AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Walnut Street / Olds Street (M-99)	Signal	EBL	0.0*	A	13.0	B	14.6	B	0.0*	A	13.0	B	14.6	B	N/A		0.0	-	0.0	-
		EBT	59.3	E	27.1	C	40.8	D	361.7	F	43.1	D	247.5	F	302.4	E→F	16.0	C→D	206.7	D→F
		EBR	62.4	E	27.5	C	41.6	D	361.7	F	43.1	C	247.5	F	299.3	E→F	15.6	-	205.9	D→F
		WBL	36.5	D	15.3	B	25.7	C	36.8	D	17.6	B	27.9	C	0.3	-	2.3	-	2.2	-
		WBTR	154.5	F	36.8	D	50.8	D	152.4	F	36.2	D	50.2	D	-2.1	-	-0.6	-	-0.6	-
		NBL	29.1	C	28.0	C	26.2	C	29.1	C	28.0	C	26.2	C	0.0	-	0.0	-	0.0	-
		NBR	15.1	B	31.0	C	60.8	F	15.1	B	30.8	C	60.8	F	0.0	-	-0.2	-	0.0	-
		SB	42.5	D	50.1	D	48.3	D	42.6	D	50.0	D	48.3	D	0.1	-	-0.1	-	0.0	-
Overall	60.0	E	27.0	C	45.4	D	132.4	F	30.0	C	92.6	F	72.4	E→F	3.0	-	47.2	D→F		
2 Water Street / West Street	Signal	EBL	0.3	A	0.1	A	0.5	A	0.2	A	0.1	A	0.2	A	-0.1	-	0.0	-	-0.3	-
		EBTR	0.7	A	0.5	A	0.9	A	1.9	A	1.7	A	1.7	A	1.2	-	1.2	-	0.8	-
		WBL	0.1	A	0.1	A	0.4	A	0.1	A	0.1	A	0.1	A	0.0	-	0.0	-	-0.3	-
		WBTR	0.7	A	0.4	A	0.4	A	1.8	A	0.9	A	1.1	A	1.1	-	0.5	-	0.7	-
		NB	28.7	C	28.3	C	28.8	C	28.8	C	28.3	C	28.7	C	0.1	-	0.0	-	-0.1	-
		SB	25.7	C	26.1	C	27.7	C	25.8	C	26.1	C	27.7	C	0.1	-	0.0	-	0.0	-
		Overall	5.3	A	4.5	A	3.0	A	6.2	A	5.2	A	3.6	A	0.9	-	0.7	-	0.6	-
3 Maumee Street / Evans Street (M-99)	Signal	EBL	3.0	A	0.7	A	1.7	A	9.2	A	1.1	A	3.2	A	6.2	-	0.4	-	1.5	-
		EBTR	1.2	A	0.5	A	0.8	A	3.1	A	1.1	A	2.5	A	1.9	-	0.6	-	1.7	-
		WBL	11.7	B	4.1	A	6.5	A	11.9	B	4.1	A	6.5	A	0.2	-	0.0	-	0.0	-
		WBTR	11.8	B	4.6	A	7.2	A	17.1	B	5.6	A	9.3	A	5.3	-	1.0	-	2.1	-
		NB	20.7	C	25.2	C	22.5	C	20.7	C	25.2	C	22.5	C	0.0	-	0.0	-	0.0	-
		SB	26.4	C	28.1	C	26.1	C	26.4	C	28.1	C	26.1	C	0.0	-	0.0	-	0.0	-
Overall	13.1	B	7.7	A	9.5	A	15.3	B	8.2	A	10.7	B	2.2	-	0.5	-	1.2	A→B		
4 East Street / Wright Street	Stop (Minor)	EBL	9.7	A	8.7	A	8.7	A	9.5	A	8.6	A	8.7	A	-0.2	-	-0.1	-	0.0	-
		WBL	9.1	A	8.7	A	9.3	A	9.0	A	8.6	A	9.2	A						
		NB	20.7	C	15.6	C	25.9	D	26.0	D	18.9	C	33.6	D	5.3	C→D	3.3	-	7.7	-
		SB	34.0	D	17.0	C	31.6	D	50.2	F	21.2	C	44.8	E	16.2	D→F	4.2	-	13.2	D→E
5 Middle School Drive	Stop (Minor)	EBL	9.7	A	8.3	A	8.5	A	9.7	A	8.2	A	8.5	A	0.0	-	-0.1	-	0.0	-
		WB	Free						Free						N/A					
		SB	19.0	C	10.6	B	12.1	B	17.0	C	10.6	B	12.7	B	-2.0	-	0.0	-	0.6	-

* Indicates no vehicle volume present

Table 5: Road Diet (Horizon Year 2042) w/ Improvements – Intersection Operations

Intersection	Control	Approach	Road Diet (3-Lanes)						Road Diet (3-Lanes) w/ Improvements						Difference					
			AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak		AM Peak		MD Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Chicago Street & Walnut Street / Olds Street (M-99)	Signal	EBL	0.0*	A	13.0	B	14.6	B	0.0*	A	13.0	B	16.4	B	N/A		0.0	-	1.8	-
		EBT	361.7	F	43.1	D	247.5	F	91.9	F	32.6	C	50.0	D	-269.8	-	-10.5	D→C	-197.5	F→D
		EBR	361.7	F	43.1	C	247.5	F	27.4	C	23.7	C	22.9	C	-334.3	F→C	-19.4	-	-224.6	F→C
		WBL	36.8	D	17.6	B	27.9	C	38.1	D	16.4	B	20.5	C	1.3	-	-1.2	-	-7.4	-
		WBT	152.4	F	36.2	D	50.2	D	8.9	A	36.0	D	12.7	B	-143.5	F→A	-0.2	-	-37.5	D→B
		WBR	152.4	F	36.2	D	50.2	D	6.6	A	21.6	C	9.8	A	-145.8	F→A	-14.6	D→C	-40.4	D→A
		NBL	29.1	C	28.0	C	26.2	C	34.2	C	28.0	C	28.9	C	5.1	-	0.0	-	2.7	-
		NBR	15.1	B	30.8	C	60.8	F	17.8	B	30.8	C	48.2	D	2.7	-	0.0	-	-12.6	F→D
		SB	42.6	D	50.0	D	48.3	D	48.5	D	50.0	D	51.0	D	5.9	-	0.0	-	2.7	-
Overall			132.4	F	30.0	C	92.6	F	39.6	D	27.7	C	34.9	C	-92.8	F→D	-2.3	-	-57.7	F→C

* Indicates no vehicle volume present

5 MULTI-MODAL FACILITIES

The existing multi-modal facilities were reviewed as part of this study to determine the impacts on pedestrian and bicycle facilities with a road diet. The existing multi-modal facilities along the corridor are shown on the attached **Figure 6**. There are existing multi-modal facilities along the corridor including:

- Sidewalks on both sides of the roadway.
- Connectivity to the Jerry Russell Trail.
- Marked pedestrian crossings at all signalized intersections.
- Pedestrian signal heads and push buttons at all signalized intersections.
- Marked school crossing at Wright Street/ East Street.

Additionally, the roadway cross-section width that will be eliminated with the road diet and removal of the outside through lanes, between Walnut Street / Olds Street (M-99) and the existing three-lane cross-section, is proposed to be converted to provide buffered bike lanes on both sides of the roadway.

Key findings of the review of the existing facilities are summarized below:

Jerry Russell Trail

The Jerry Russell trail runs generally in the north/south directions, located east of the Chicago Street (US-12) & Walnut Street / Olds Street (M-99) intersection. The trail crossing directs pedestrians and bicycles, wishing to cross Chicago Street (US-12), to the signalized intersection at Walnut Street / Olds Street (M-99). This is a detour of approximately 800-feet. During the 13-hour data collection (6:00 AM – 7:00 PM) 32 pedestrians crossed at the trail head crossing and 33 pedestrians crossed at the marked / signed signalized crossing. Based on this collected data, there is a noted desire for pedestrians to cross at the trail head location, rather than walking to the signal for a protected crossing; however, the data collected indicates a maximum hourly crossing volume of nine (9) pedestrians at the Jerry Russell Trail crossing, which is below the MDOT minimum pedestrian volume threshold, regardless of the pedestrian ages, which were not collected. Therefore, based on pedestrian volumes not meeting the MDOT minimum threshold, treatments and/or enhancements are not warranted at this pedestrian crossing location.

School Crossings

The pedestrian volumes were reviewed to determine the need for pedestrian crossing treatments along the study corridor. The analysis was performed in accordance with MDOT's *Guidance for Installation of Pedestrian Crosswalks on Michigan State Trunkline Highways*, as summarized below.

There is a designated school crossing at Wright Street / East Street intersection; however, through discussions with the City, they advised that the school district discourages students from using this crossing, due to the long (75-foot) unprotected crossing distance. Within the 6-hours of peak period data collection (AM, MD, and PM), a total of 13 pedestrians were recorded crossing at this location, while 40 pedestrians crossed at the adjacent signalized Evans Street / Maumee Street intersection.

Based on the pedestrian volumes, there is a desire for students to cross at the school crossing despite the school district discouraging crossing at this location. However, the data collection indicates a maximum hourly crossing volume of eight (8) pedestrians, which is below the MDOT minimum pedestrian volume threshold. Therefore, pedestrian crossing treatments and/or enhancements are not warranted at this location.

The MDOT minimum pedestrian volume for treatment at an uncontrolled crossing location is as follows:

- 20 pedestrians per hour* in any one hour, or
- 18 pedestrians per hour* in any two hours, or
- 15 pedestrians per hour* in any three hours, or
- 10 school age (grades K-12) pedestrians traveling to or from school in any one hour and the crossing in a designated school walking route

* Young, elderly, and disabled pedestrians count two times towards volume threshold

6 SAFETY STUDY

6.1 CRASH ANALYSIS

A crash analysis was conducted at the study intersections and roadway segments along the West Chicago Street (US-12) corridor. Historical traffic crash data was obtained from Michigan Traffic Crash Facts (MTCF). The crash analysis includes crashes from most recent five years (January 1, 2016, to December 31, 2020) of available data. There were a total 104 crashes reported along the study corridor in the past five years. There were 23 crashes with injuries, including seven (7) “Type B” injury crashes and two (2) fatalities.

A fatal crash occurred in April 2018 and involved three (3) vehicles. Vehicle 1 struck the right-rear of Vehicle 2 as they were turning into a driveway approximately 130 feet east of Olds Street. Vehicle 1 then lost control and struck Vehicle 3 going the opposite direction. The driver and passenger of Vehicle 1 were both killed. The crash report showed that alcohol was a contributing factor to the crash; additionally, neither the driver or passenger of Vehicle 1 were wearing seatbelts and no airbags deployed.

Another fatal crash occurred in August 2018 and involved two (2) vehicles. Vehicle 1 was travelling eastbound on West Chicago Street and struck the drivers-side of Vehicle 2 as they were turning out of a driveway approximately 300 feet east of Olds Street. The driver of Vehicle 2 was killed.

The general crash type along the corridor is Rear-End – Straight (32%), Sideswipe-Same Direction (24%), and Angle (22%) crashes. The majority of crashes at the signalized intersections are angle crashes and rear end crashes, which is typical of signalized intersections. Review of the UD-10 reports for these intersections indicate that the crashes were distributed equally from all directions of travel, suggesting that a directional crash pattern was not present. All the crashes included in this analysis are summarized in **Chart 1**. The individual intersection and segment crash types along the West Chicago Street (US-12) corridor are summarized in **Table 6**. Review of the summary data indicate that the majority of crashes occurred at the West Chicago Street (US-12) intersections with Walnut Street / Olds Street (M-99), Water Street / West Street, and Maumee Street / Evans Street (M-99).

Chart 1: Percentage of Crashes by Type

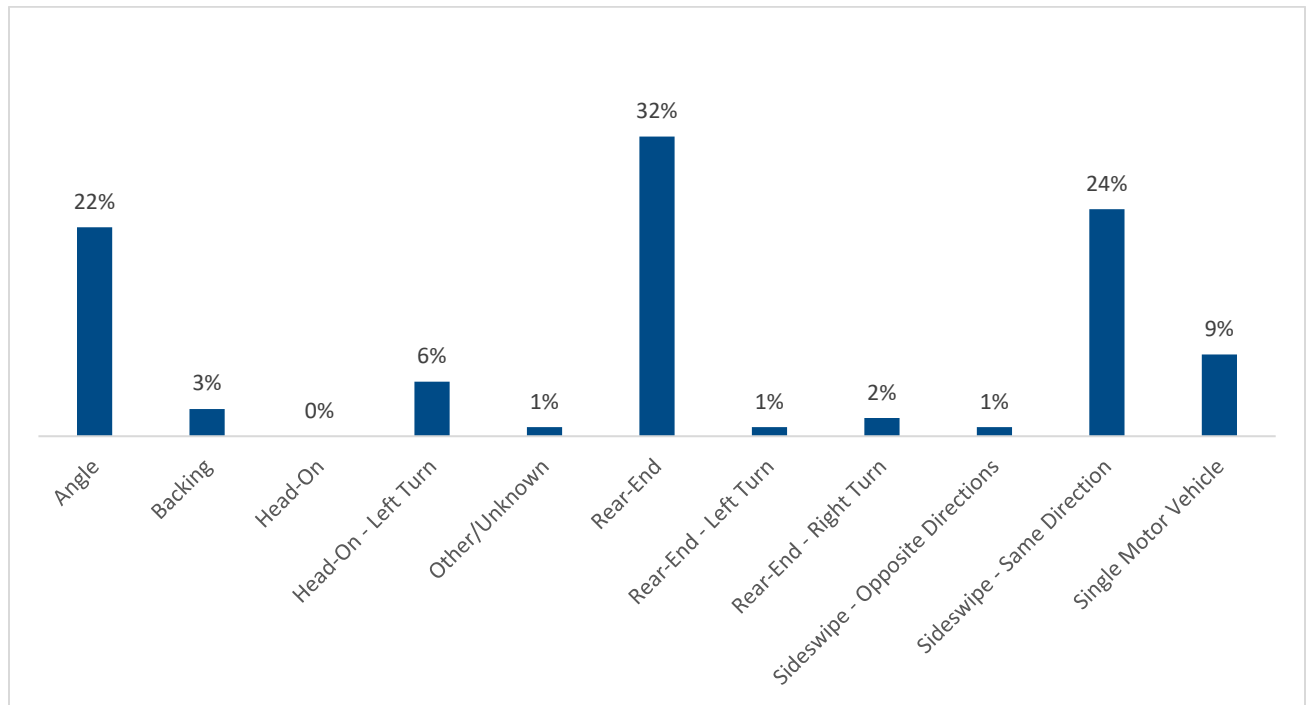


Table 6: Intersection and Segment Crash Summary by Crash Type

West Chicago Street (US-12) Location	Single Motor Vehicle	Head On	Head On Left-Turn	Angle	Rear End (Straight)	Rear End (Left-Turn)	Rear End (Right-Turn)	Sideswipe-Same	Sideswipe-Opposite	Other/Unknown	Total	Percentage
Intersection Crashes												
Walnut Street / Olds Street (M-99)	4	1	0	7	11	1	2	6	1	2	35	40.23%
Water Street / West Street	4	0	1	5	7	0	0	5	0	1	23	26.44%
Maumee Street / Evans Street (M-99)	0	0	1	6	10	0	0	6	0	0	23	26.44%
East Street / Wright Street	0	0	1	1	0	0	0	2	0	0	4	4.60%
Middle School Drive	0	0	0	0	0	0	0	1	0	1	2	2.30%
Total Intersection Related	8	1	3	19	28	1	2	20	1	4	87	100%
Segment Crashes												
Walnut Street / Olds Street (M-99) to Water Street / West Street	1	0	0	1	0	0	0	1	0	0	3	17.65%
Water Street / West Street to Maumee Street / Evans Street (M-99)	0	0	0	1	1	0	0	2	0	0	4	23.53%
Maumee Street / Evans Street to East Street / Wright Street	0	0	1	1	2	0	0	1	0	0	5	29.41%
East Street / Wright Street to Middle School Drive	0	0	1	1	2	0	0	1	0	0	5	29.41%
Total Segment Related	1	0	2	4	5	0	0	5	0	0	17	100%
Total Corridor	9	1	5	23	33	1	2	25	1	4	104	

Table 7: Road Conditions Summary

Road Conditions		
Condition	Number of Crashes	%
Dry	81	78%
Snowy/Icy/Slush	3	3%
Wet	20	19%
Unknown	0	0%
Total	104	100%

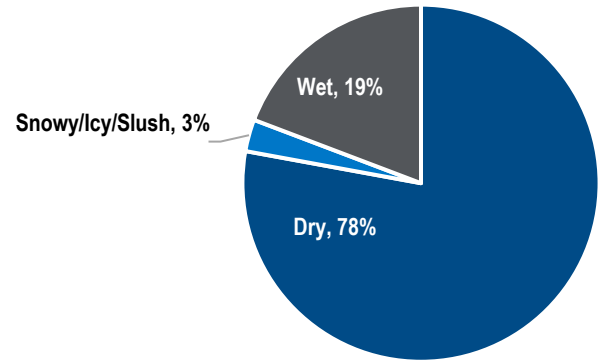


Table 8: Light Conditions Summary

Light Conditions		
Condition	Number of Crashes	%
Dark-Unlighted	1	1%
Dark-lighted	11	11%
Dusk	1	1%
Dawn	1	1%
Daylight	90	86%
Total	104	100%

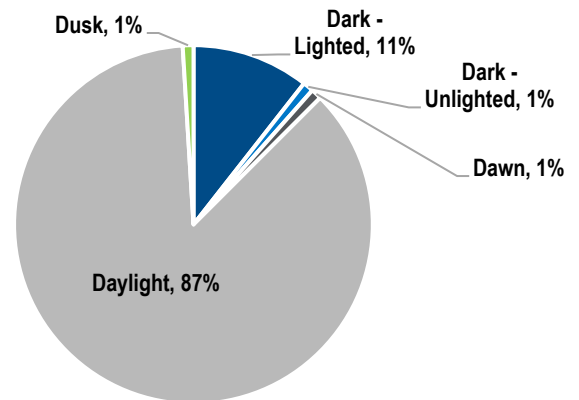
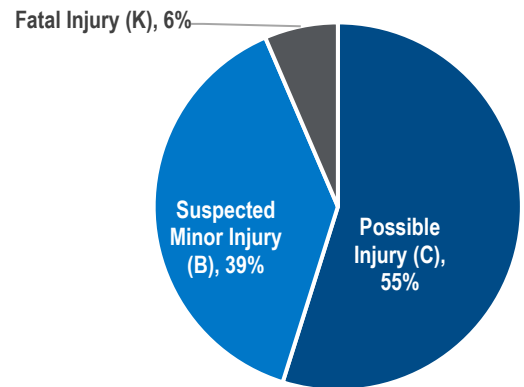


Table 9: Crashes with Injury

Worst Injury in Crash		
Severity	Crashes with Injury	% of Injuries
Fatalities	2	6%
"A" Injuries	0	0%
"B" Injuries	7	39%
"C" Injuries	15	55%
Total	24	100%



6.2 HIGHWAY SAFETY MANUAL ANALYSIS

In order to determine the anticipated impact on safety, an analysis was performed according to the Highway Safety Manual (HSM) Empirical Bayes (EB) methodology. The analysis included the evaluation of the West Chicago Street (US-12) & Walnut Street / Olds Street (M-99) intersection with the following scenarios:

- Existing Geometry 2022 Volumes (5-Lanes)
- Road Diet 2022 Volumes (3-Lanes)

The latest HSM analysis spreadsheet, provided by the MDOT Safety Programs Unit, was utilized to determine the expected crashes associated with the existing and proposed road diet geometries. This analysis used the urban / sub-urban segments model and the crash prediction values provided in the HSM spreadsheet. The results of the analysis are summarized in **Table 11** and the detailed HSM summary sheets are attached.

The results of the analysis indicates that, with the implementation of the road diet, the total crashes are expected to increase; however, the fatal and injury (FI) crashes are expected to decrease. Therefore, the proposed road diet would result in safer overall conditions, with a smaller likelihood for motorists to get injured or killed.

Table 11: Highway Safety Analysis Summary

Analysis Scenario	Roadway	Segment	N _{expected} (TOTAL)	N _{expected} (FI)	N _{expected} (PDO)
Existing 5-Lanes	Chicago St.	Walnut Street / Olds Street (M-99) to ECL	2.78	0.64	2.14
Proposed 3-Lanes	Chicago St.	Walnut Street / Olds Street (M-99) to ECL	2.82	0.62	2.20

7 CONCLUSIONS

The conclusions of this Traffic Study are as follows:

INTRODUCTION

The City of Jonesville is considering a road diet of the existing five-lane section of the West Chicago Street (US-12) corridor, between Walnut Street / Olds Street (M-99) to the west and the existing three-lane section to the east. The roadway cross-section width that will be eliminated with the road diet and removal of the outside through lanes, is proposed to be converted to provide buffered bike lanes on both sides of the roadway.

It should be noted that, with the implementation of a road diet along the study corridor, side street delays are expected to increase.

INTERSECTION OPERATIONS

All of the study intersections are expected to operate acceptably, at LOS D or better during all peak periods (AM, MD, and PM) analyzed, and are expected to continue operating acceptably with the implementation of the proposed road diet, with the exception of the following:

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The eastbound shared through/right movement is expected to operate at LOS F during both the AM and PM peak hours.
- The westbound through movements are expected to operate at LOS F during the AM peak hour.

Chicago Street (US-12) & East Street / Wright Street

- The southbound approach is expected to operate at LOS E during the AM peak hour. Review of this intersection approach indicates delays during the AM peak hour, due to school traffic.

RECOMMENDED MITIGATION MEASURES

Mitigation measures were reviewed with the addition of the road diet, in order to improve the operations at Walnut Street / Olds Street (M-99). The recommended mitigation measures include the following.

- Signal timing optimization
- Restripe the eastbound and westbound approaches to provide exclusive right-turn lanes.

The results of the road diet (2022) with improvements analysis indicates that multiple study intersection approaches and movements at Chicago Street (US-12) & Walnut Street / Olds Street (M-99) will experience reductions in delay and improved LOS. Additionally, with the improvements implemented, all intersection approaches and movements are expected to operate acceptably, at a LOS D or better during all peak periods (AM, MD, & PM) analyzed, with the exception of the following:

Chicago Street (US-12) & Walnut Street / Olds Street (M-99)

- The eastbound through movement is expected to operate at LOS E during the AM peak hour.

MULTI-MODAL FACILITIES

The existing multi-modal facilities were reviewed as part of this study to determine the impacts on pedestrian and bicycle facilities with a road diet; key findings of the review are summarized below.

- There are two (2) uncontrolled pedestrian crossings along this corridor: one (1) at the Jerry Russell Trail and one (1) at Wright Street / East Street. The MDOT crosswalk guidance was evaluated.
- The results of the analysis indicates that the pedestrian volumes collected are below the MDOT minimum threshold; therefore, treatments and/or enhancements are not warranted at these location.

SAFETY STUDY

A crash analysis was conducted at the study intersections and roadway segments along the West Chicago Street (US-12) corridor. Key findings of the crash analysis are summarized below:

- There were a total 104 crashes reported along the study corridor in the past five years (January 1, 2016, to December 31, 2020).
- The majority of the crashes (87%) were intersection related, with 13% of the crashes related to the driveways. The general crash type along the corridor is Rear-End – Straight (32%), Sideswipe-Same Direction (24%), and Angle (21%) crashes.
- There were 24 crashes with injuries, including seven (7) “Type B” injury crashes and two (2) fatalities.

8 RECOMMENDATIONS

The primary goal of the proposed road diet is to improve safety by reducing the crossing distances and reducing vehicle speeds by eliminating excess roadway capacity. Recommendations for pavement markings and intersection layouts to improve pedestrian safety are shown in the attached conceptual design plans. The results of the analysis show that a road can be implemented along the corridor, with the following mitigation measures:

- Corridor signal timing optimization.
- Restripe the eastbound and westbound approaches at the Chicago Street (US 12) at Walnut Street / Olds Street (M-99) intersection. The recommended intersection geometry is shown below.



Any questions related to this memorandum, study, analyses, and results should be addressed to Fleis & VandenBrink.



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Michigan.

Attached: Figures 1-6
Conceptual Design Plans
Traffic Volume Data
Synchro / SimTraffic Reports
Signal Timing Permits (Red-lined)
HSM Analysis

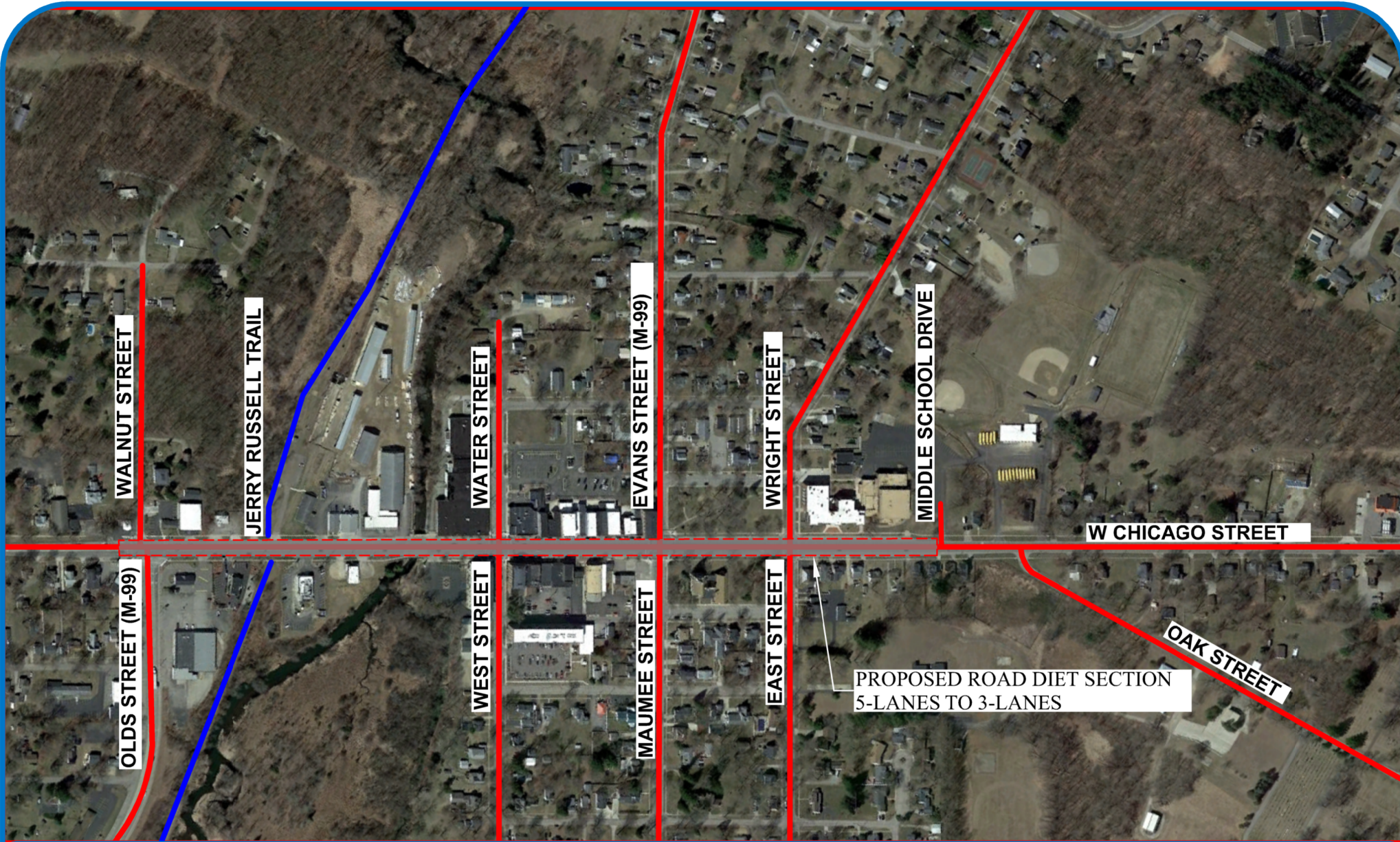


FIGURE 1 SITE LOCATION

WEST CHICAGO STREET - ROAD DIET STUDY, JONESVILLE, MI

LEGEND

- ROADS
- SHARED USE PATH



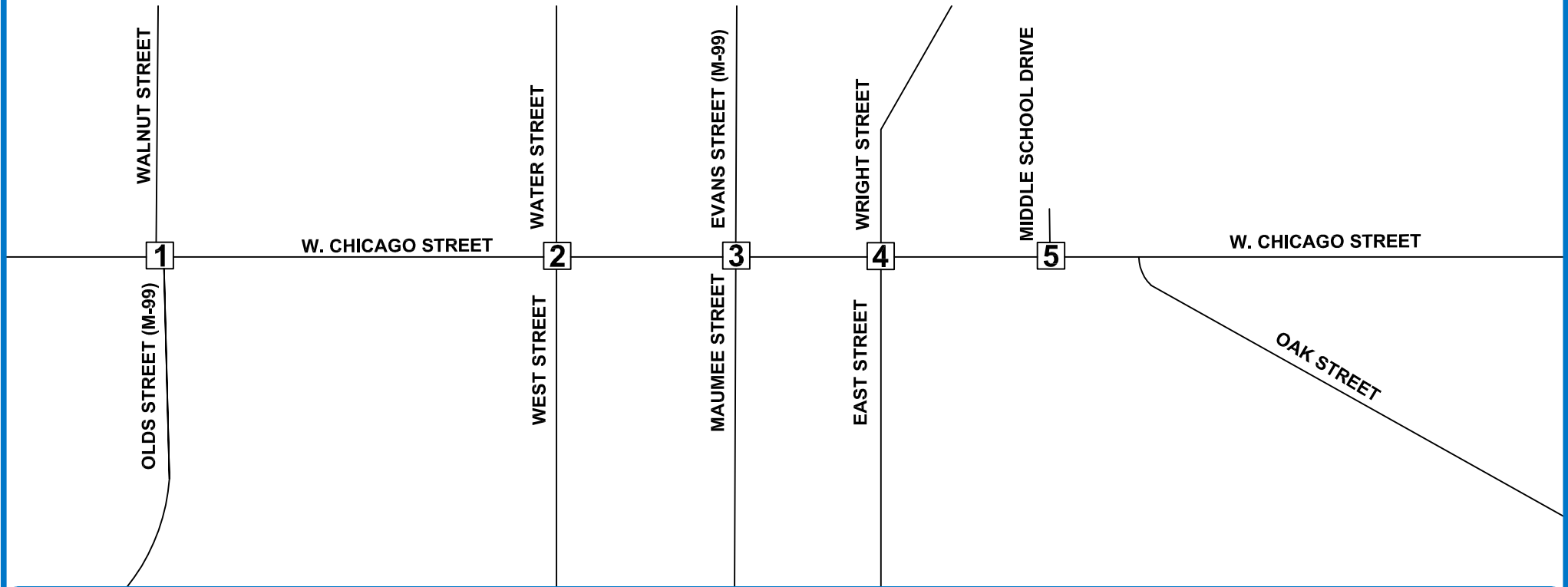
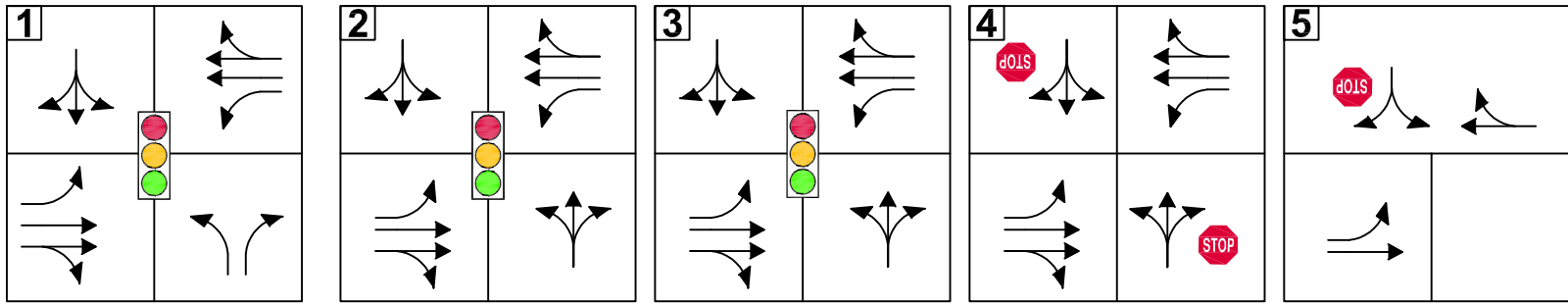


FIGURE 2
EXISTING LANE USE AND
TRAFFIC CONTROL

WEST CHICAGO STREET - ROAD DIET STUDY, JONESVILLE, MI

LEGEND

- ROADS
- LANE USE
- SIGNALIZED INTERSECTION



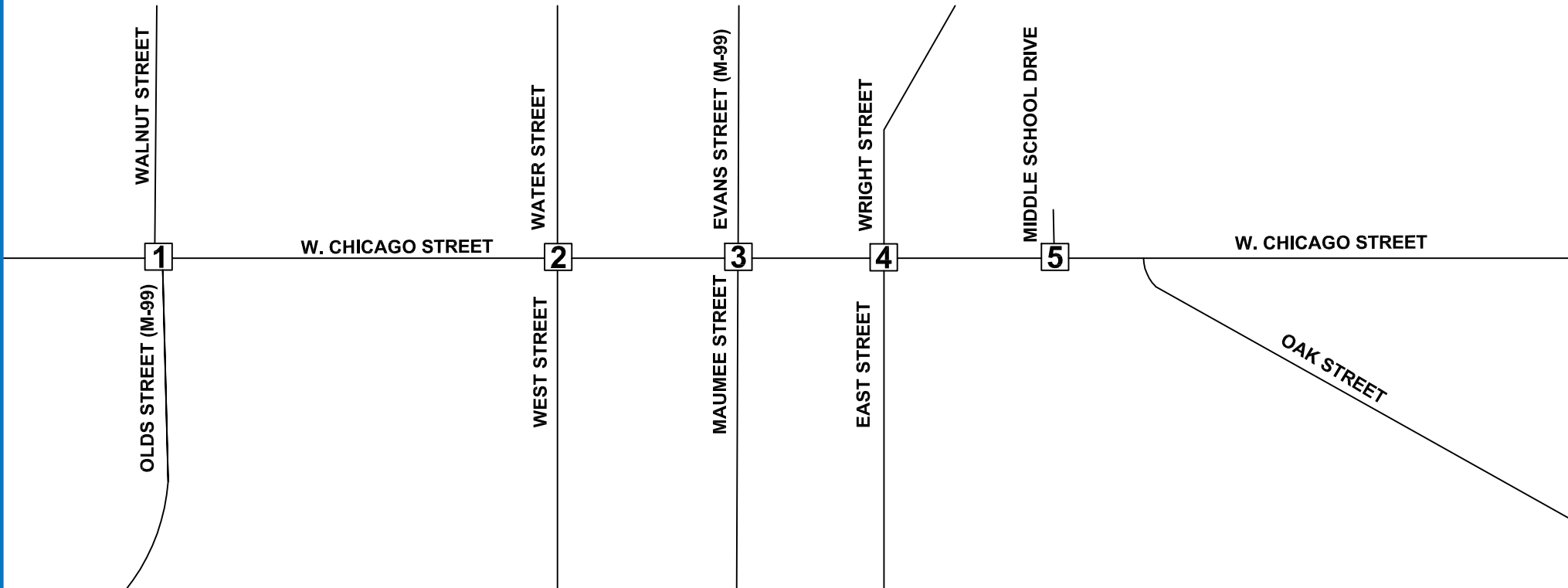
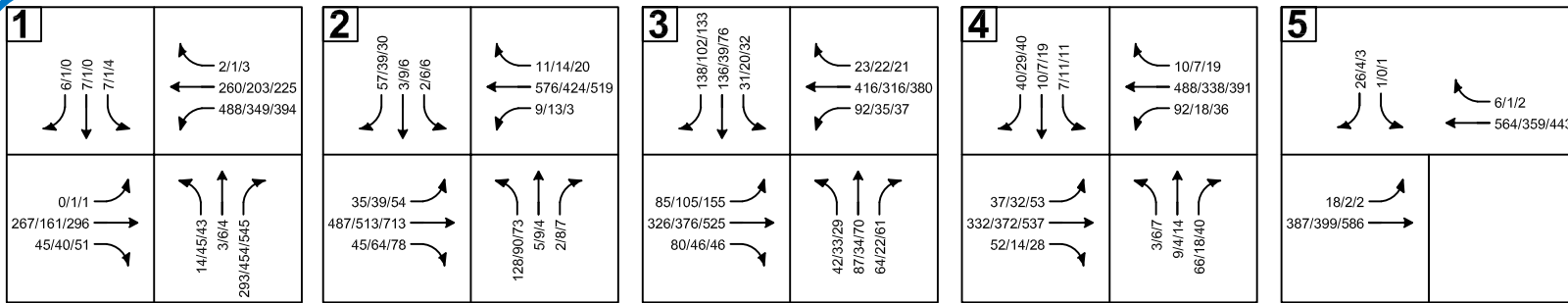


FIGURE 3

EXISTING TRAFFIC VOLUMES

WEST CHICAGO STREET - ROAD DIET STUDY, JONESVILLE, MI

LEGEND

- ROADS
- - - PROPOSED ROADS
- |||||>>> TRAFFIC VOLUMES (AM/MD/PM)



NORTH
SCALE: NOT TO SCALE

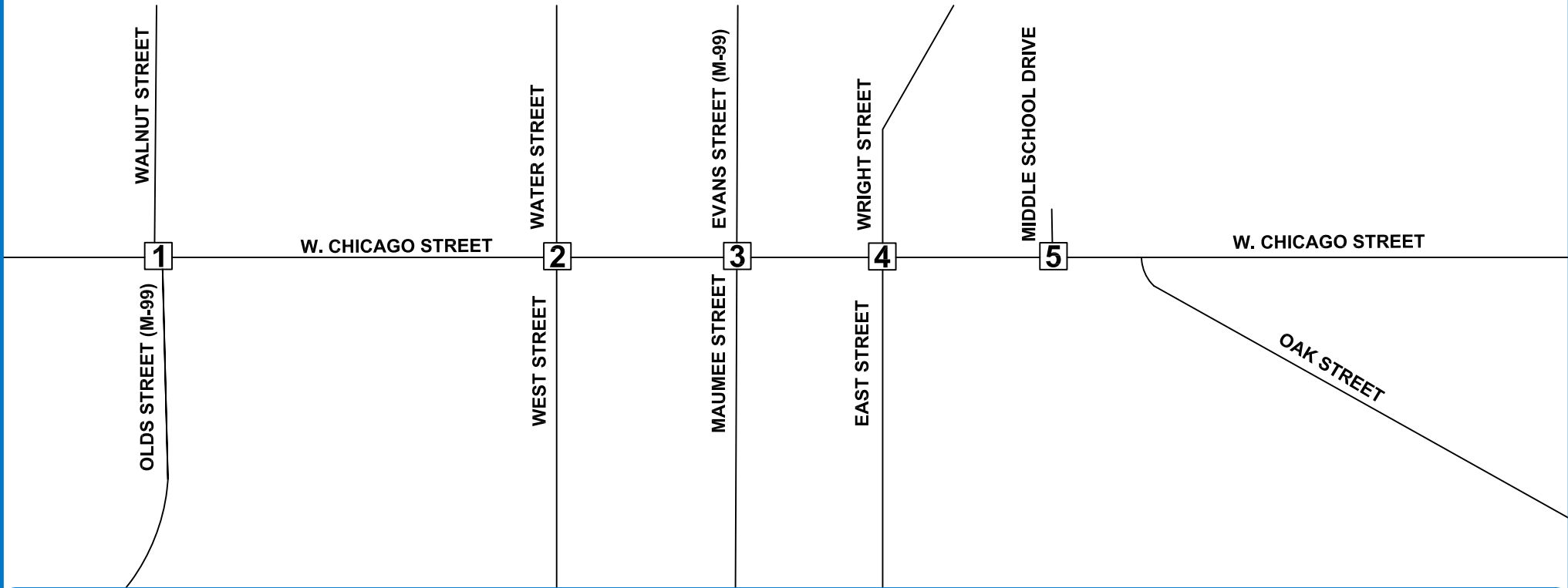
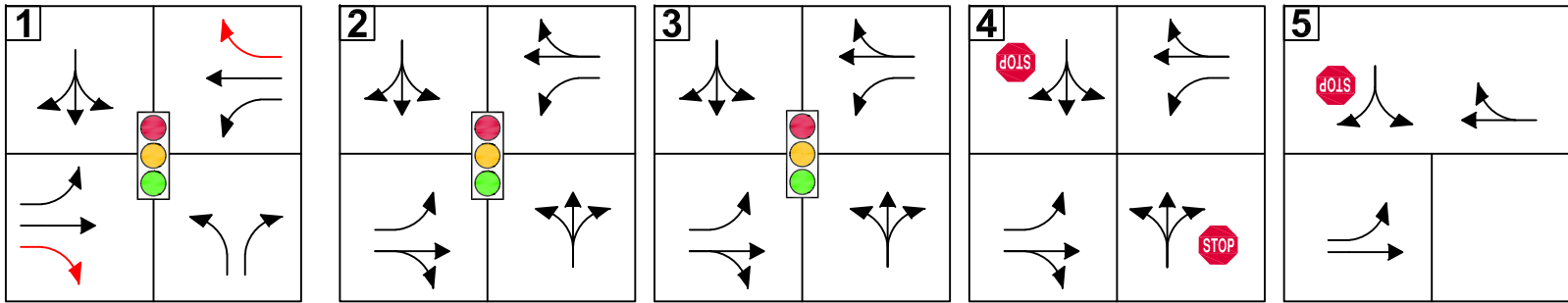





FIGURE 4 ROAD DIET LANE USE WITH IMPROVEMENTS

WEST CHICAGO STREET - ROAD DIET STUDY, JONESVILLE, MI

LEGEND

-  ROADS
-  ROAD DIET LANE USE
-  RECOMMENDED LANE USE



NORTH
SCALE: NOT TO SCALE

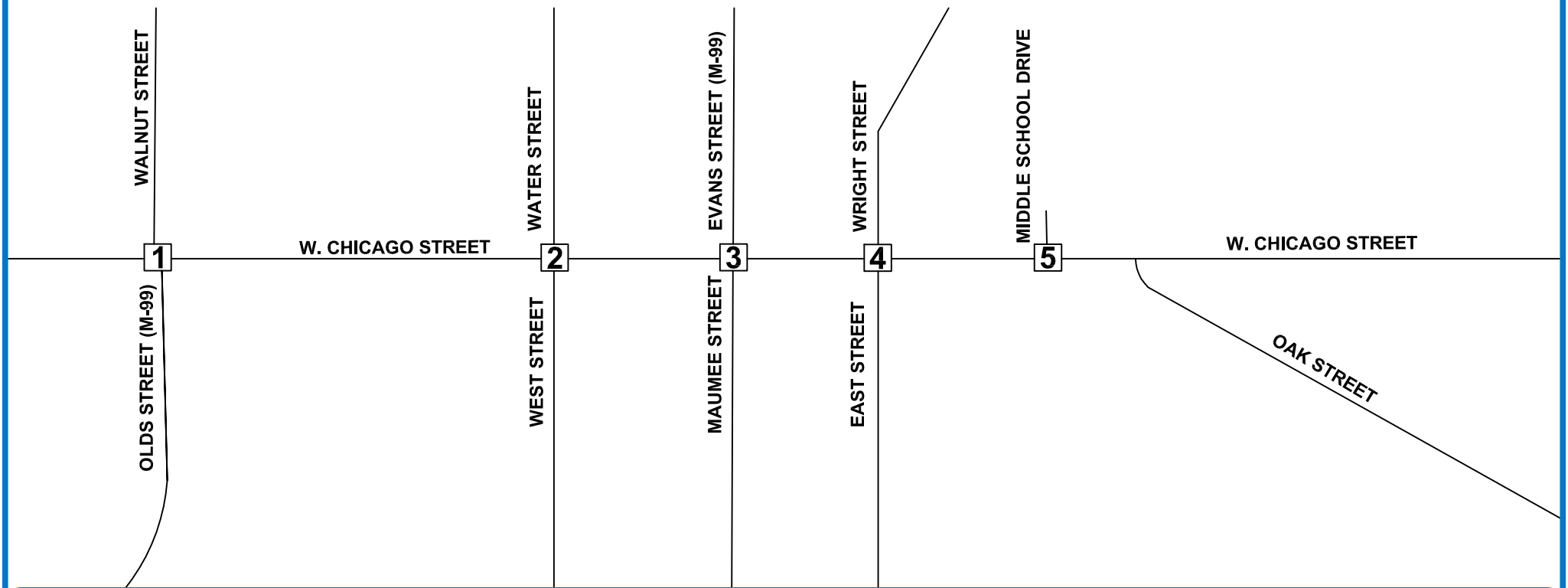
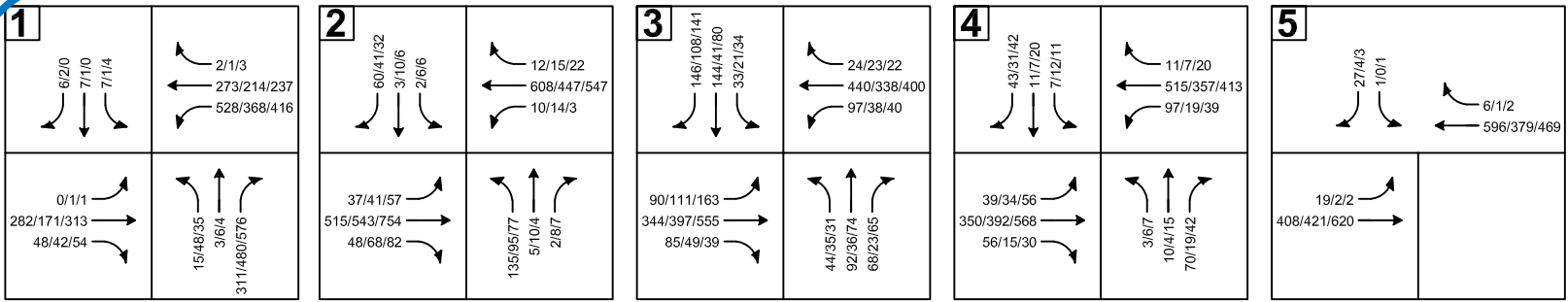


FIGURE 5
HORIZON YEAR (2042)
TRAFFIC VOLUMES

WEST CHICAGO STREET - ROAD DIET STUDY, JONESVILLE, MI

LEGEND

- ROADS
- - - PROPOSED ROADS
- ||||| ← TRAFFIC VOLUMES (AM/MD/PM)



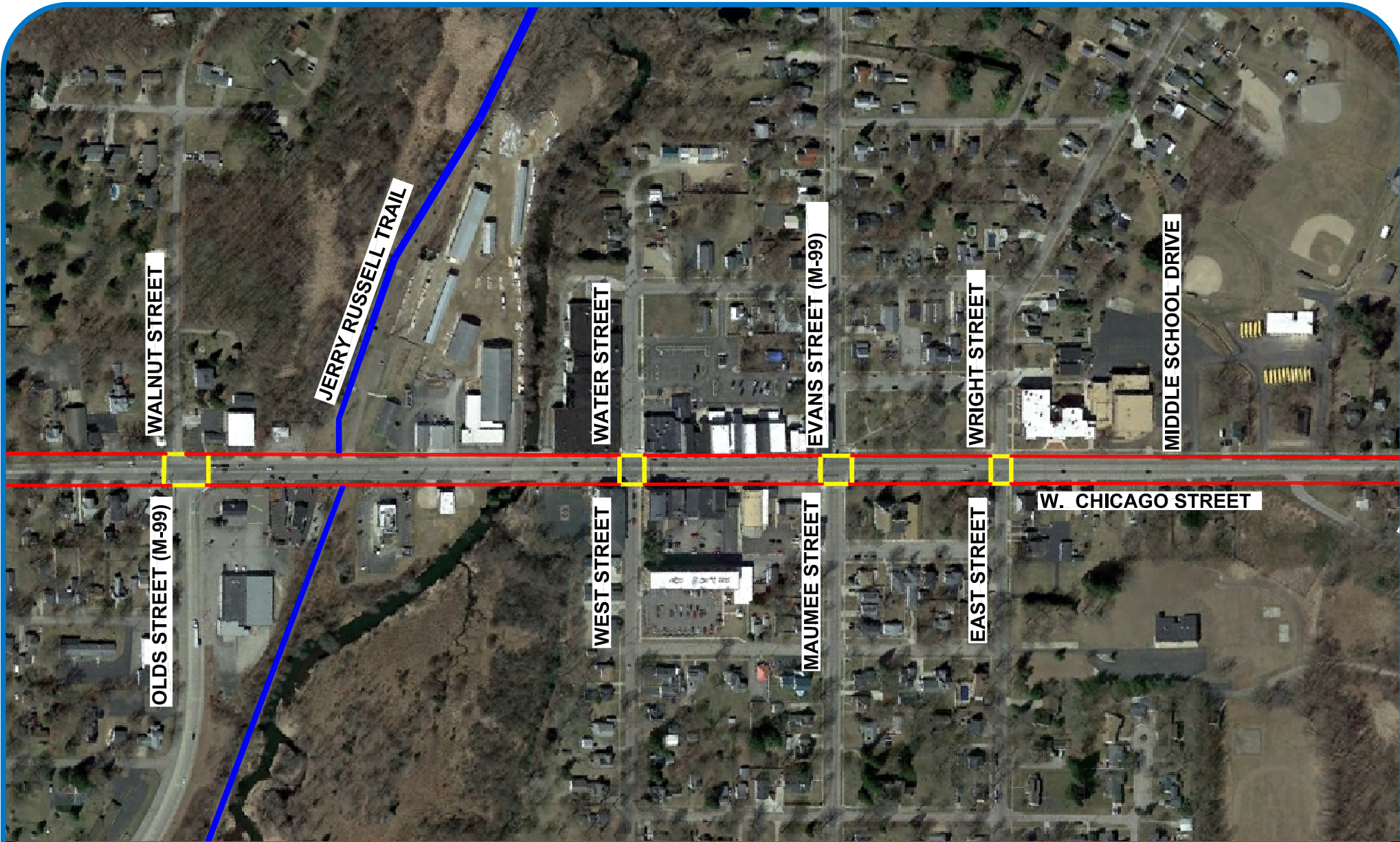


FIGURE 6

MULTI MODEL FACILITIES

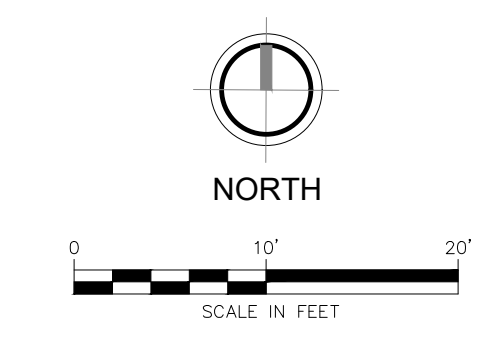
WEST CHICAGO STREET - ROAD DIET STUDY, JONESVILLE, MI

LEGEND




- SHARED USE PATH
- SIDEWALK
- EXISTING CROSSWALK / CONFLICT POINT



NORTH
SCALE: NOT TO SCALE



LEGEND

-  PROPOSED LED LIGHT RETROFIT - PARTICIPATING
-  PROPOSED STREET TREE W/FLUSH CURB AND PIP SURFACING - PARTICIPATING
-  PROPOSED BICYCLE LANE - PARTICIPATING
-  PROPOSED BUFFER ZONE - PARTICIPATING
-  PROPOSED CROSSWALK - PARTICIPATING
-  PROPOSED BARRIER FREE PARKING - NON - PARTICIPATING
-  PROPOSED STOP BAR - PARTICIPATING
-  PROPOSED DETECTABLE WARNING PLATE - PARTICIPATING
-  PROPOSED QWICK CURB
-  PROPOSED SOLAR BEACON CROSSING SIGNAL
-  PROPOSED ADVISORY PEDESTRIAN CROSSING SIGN

**CHICAGO STREET
WALNUT STREET/
OLDS STREET (M-99)**
JONESVILLE, MI HILLSDALE COUNTY

**CONCEPTUAL
INTERSECTION PLAN**

PROJECT NO. 2560
DATE 08/2021



2560 Lucerne Drive SE
Grand Rapids, MI 49546
P: 616.977.1000
F: 616.977.1005



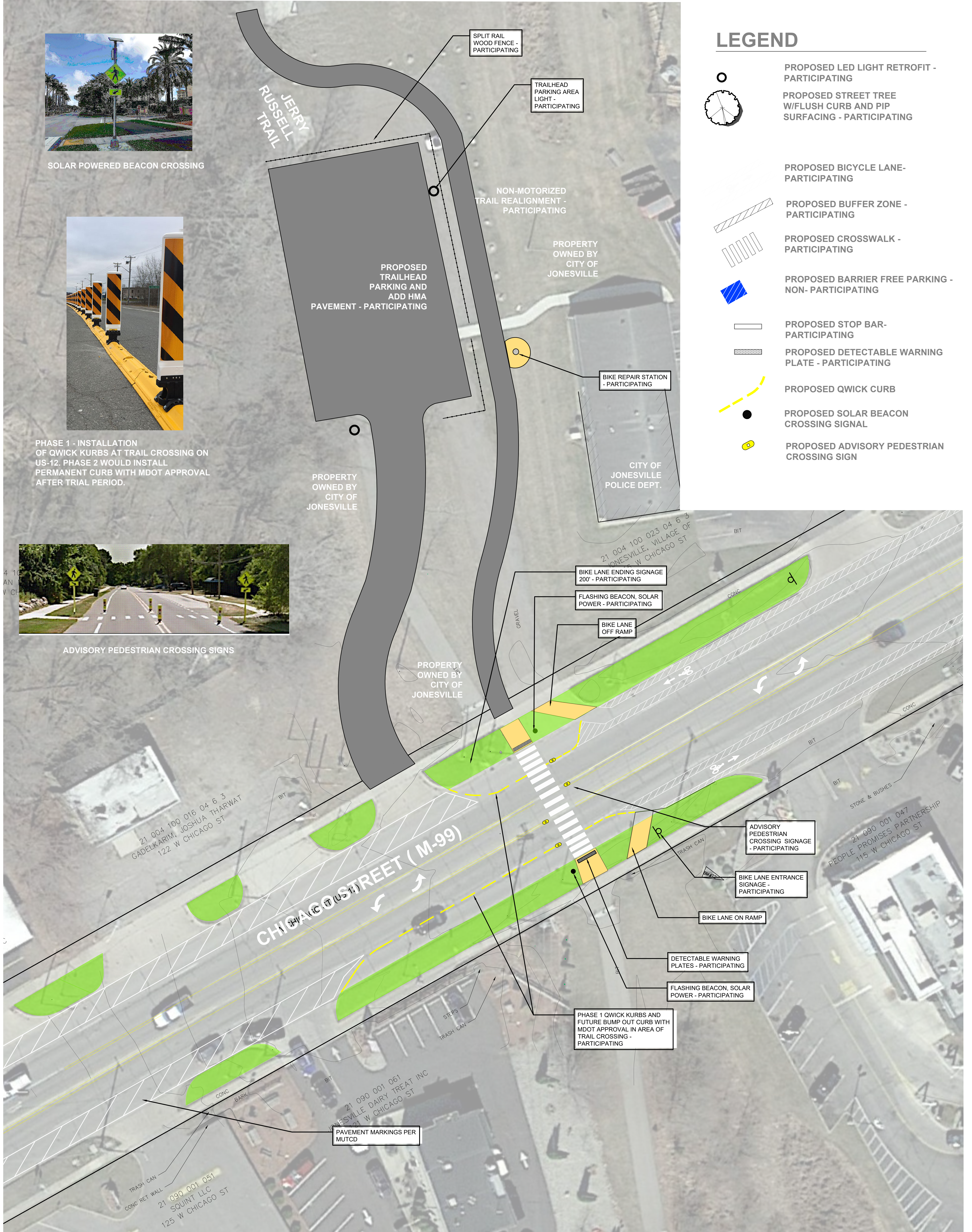
SOLAR POWERED BEACON CROSSING




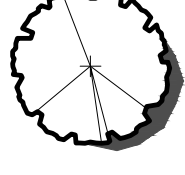








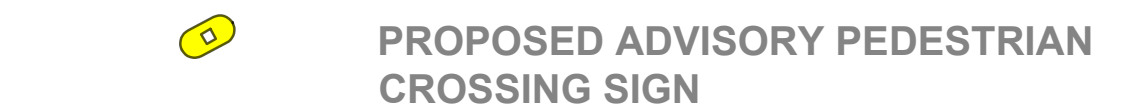
PHASE 1 - INSTALLATION OF QWICK KURBS AT TRAIL CROSSING ON US-12. PHASE 2 WOULD INSTALL PERMANENT CURB WITH MDT APPROVAL AFTER TRIAL PERIOD.

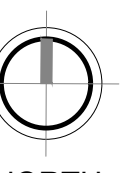


ADVISORY PEDESTRIAN CROSSING SIGNS



LEGEND

-  PROPOSED LED LIGHT RETROFIT - PARTICIPATING
-  PROPOSED STREET TREE W/FLUSH CURB AND PIP SURFACING - PARTICIPATING
-  PROPOSED BICYCLE LANE - PARTICIPATING
-  PROPOSED BUFFER ZONE - PARTICIPATING
-  PROPOSED CROSSWALK - PARTICIPATING
-  PROPOSED BARRIER FREE PARKING - NON- PARTICIPATING
-  PROPOSED STOP BAR - PARTICIPATING
-  PROPOSED DETECTABLE WARNING PLATE - PARTICIPATING
-  PROPOSED QWICK CURB
-  PROPOSED SOLAR BEACON CROSSING SIGNAL
-  PROPOSED ADVISORY PEDESTRIAN CROSSING SIGN



NORTH



SCALE IN FEET

SHEET 1 OF 5
TAP APPLICATION # 2022 037.01

US 12 MULTI-MODAL TRANSPORTATION & SAFETY IMPROVEMENTS

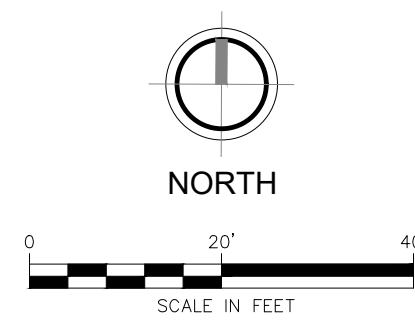
JONESVILLE, MI HILLSDALE COUNTY

OPTION A - CONCEPTUAL
TRAIL AREA CROSSING PLAN

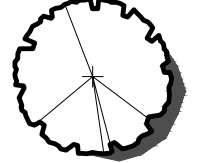
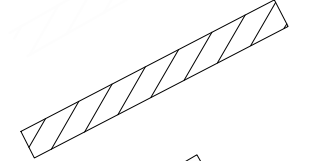
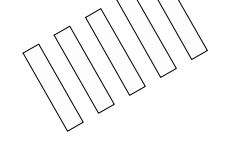

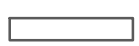

OCTOBER 2023



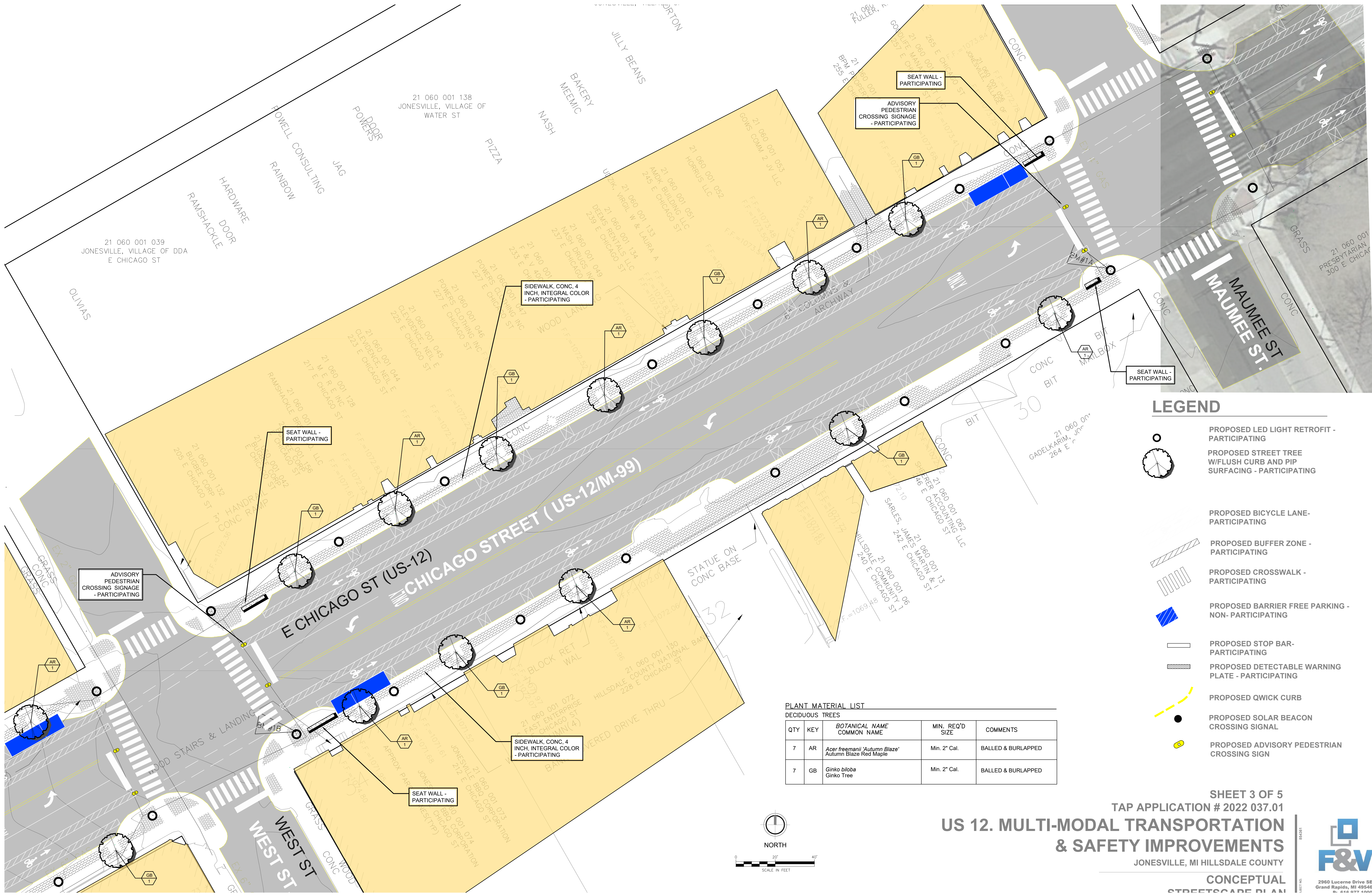
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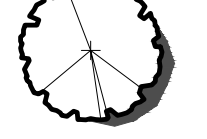




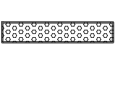



LEGEND

-  PROPOSED LED LIGHT RETROFIT - PARTICIPATING
-  PROPOSED STREET TREE W/FLUSH CURB AND PIP SURFACING - PARTICIPATING
-  PROPOSED BICYCLE LANE- PARTICIPATING
-  PROPOSED BUFFER ZONE - PARTICIPATING
-  PROPOSED CROSSWALK - PARTICIPATING
-  PROPOSED BARRIER FREE PARKING - NON- PARTICIPATING
-  PROPOSED STOP BAR- PARTICIPATING
-  PROPOSED DETECTABLE WARNING PLATE - PARTICIPATING
-  PROPOSED QWICK CURB
-  PROPOSED SOLAR BEACON CROSSING SIGNAL
-  PROPOSED ADVISORY PEDESTRIAN CROSSING SIGN



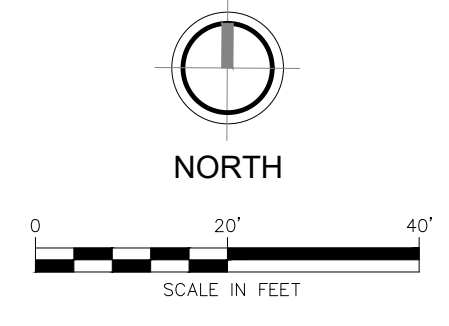


LEGEND

-  PROPOSED LED LIGHT RETROFIT - PARTICIPATING
-  PROPOSED STREET TREE W/FLUSH CURB AND PIP SURFACING - PARTICIPATING
-  PROPOSED BICYCLE LANE - PARTICIPATING
-  PROPOSED BUFFER ZONE - PARTICIPATING
-  PROPOSED CROSSWALK - PARTICIPATING
-  PROPOSED BARRIER FREE PARKING - NON- PARTICIPATING
-  PROPOSED STOP BAR - PARTICIPATING
-  PROPOSED DETECTABLE WARNING PLATE - PARTICIPATING
-  PROPOSED QWICK CURB
-  PROPOSED SOLAR BEACON CROSSING SIGNAL
-  PROPOSED ADVISORY PEDESTRIAN CROSSING SIGN

PLANT MATERIAL LIST

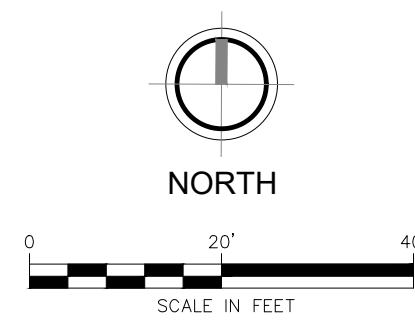
DECIDUOUS TREES				
QTY	KEY	BOTANICAL NAME COMMON NAME	MIN. REQ'D SIZE	COMMENTS
7	AR	<i>Acer freemanii</i> 'Autumn Blaze' Autumn Blaze Red Maple	Min. 2" Cal.	BALLED & BURLAPPED
7	GB	<i>Ginkgo biloba</i> Ginkgo Tree	Min. 2" Cal.	BALLED & BURLAPPED



SHEET 3 OF 5
TAP APPLICATION # 2022 037.01
**US 12. MULTI-MODAL TRANSPORTATION
& SAFETY IMPROVEMENTS**
JONESVILLE, MI HILLSDALE COUNTY

**CONCEPTUAL
STREETSCAPE PLAN**





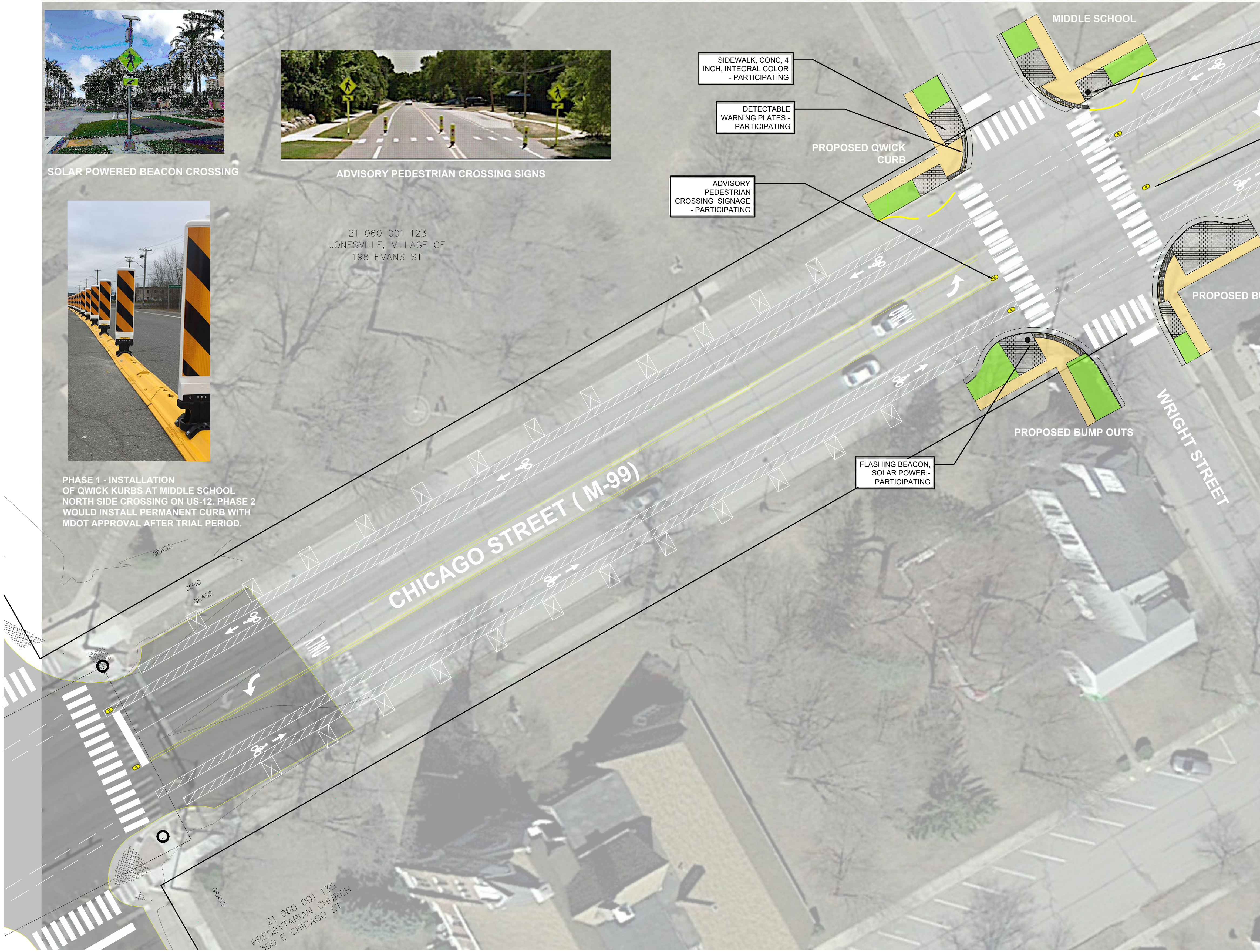
SOLAR POWERED BEACON CROSSING



ADVISORY PEDESTRIAN CROSSING SIGNS



PHASE 1 - INSTALLATION OF QUICK KURBS AT MIDDLE SCHOOL NORTH SIDE CROSSING ON US-12. PHASE 2 WOULD INSTALL PERMANENT CURB WITH MDT APPROVAL AFTER TRIAL PERIOD.



SIDEWALK, CONC. 4 INCH, INTEGRAL COLOR - PARTICIPATING

DETECTABLE WARNING PLATES - PARTICIPATING

ADVISORY PEDESTRIAN CROSSING SIGNAGE - PARTICIPATING

PROPOSED QWICK CURB

FLASHING BEACON, SOLAR POWER - PARTICIPATING

ADVISORY PEDESTRIAN CROSSING SIGNAGE - PARTICIPATING

PROPOSED BUMP OUTS

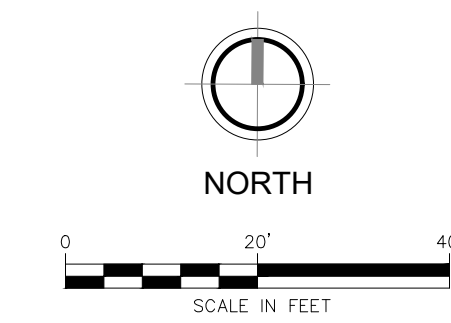
FLASHING BEACON, SOLAR POWER - PARTICIPATING

LEGEND

- PROPOSED LED LIGHT RETROFIT - PARTICIPATING
- PROPOSED STREET TREE W/FLUSH CURB AND PIP SURFACING - PARTICIPATING
- PROPOSED BICYCLE LANE - PARTICIPATING
- PROPOSED BUFFER ZONE - PARTICIPATING
- PROPOSED CROSSWALK - PARTICIPATING
- PROPOSED BARRIER FREE PARKING - NON - PARTICIPATING
- PROPOSED STOP BAR - PARTICIPATING
- PROPOSED DETECTABLE WARNING PLATE - PARTICIPATING
- PROPOSED QWICK CURB
- PROPOSED SOLAR BEACON CROSSING SIGNAL
- PROPOSED ADVISORY PEDESTRIAN CROSSING SIGN

21 060 001 135
PRESBYTERIAN CHURCH
300 E CHICAGO ST





SOLAR POWERED BEACON CROSSING



PHASE 1 - INSTALLATION OF QUICK KURBS AT MIDDLE SCHOOL NORTH SIDE CROSSING ON US-12. PHASE 2 WOULD INSTALL PERMANENT CURB WITH MDOT APPROVAL AFTER TRIAL PERIOD.



ADVISORY PEDESTRIAN CROSSING SIGNS

BIKE LANE ENTRANCE SIGNAGE

BIKE LANE ENDING SIGNAGE 100'



- ### LEGEND
- PROPOSED LED LIGHT RETROFIT - PARTICIPATING
 - PROPOSED STREET TREE W/FLUSH CURB AND PIP SURFACING - PARTICIPATING
 - PROPOSED BICYCLE LANE - PARTICIPATING
 - PROPOSED BUFFER ZONE - PARTICIPATING
 - PROPOSED CROSSWALK - PARTICIPATING
 - PROPOSED BARRIER FREE PARKING - NON- PARTICIPATING
 - PROPOSED STOP BAR - PARTICIPATING
 - PROPOSED DETECTABLE WARNING PLATE - PARTICIPATING
 - PROPOSED QUICK CURB
 - PROPOSED SOLAR BEACON CROSSING SIGNAL
 - PROPOSED ADVISORY PEDESTRIAN CROSSING SIGN

TAP APPLICATION # 2022 037.01
US 12 MULTI-MODAL TRANSPORTATION & SAFETY IMPROVEMENTS
 JONESVILLE, MI HILLSDALE COUNTY

CONCEPTUAL PLAN
 OCTOBER 2023



Olds St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929757, Location: 41.981498, -84.667313



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

Leg Direction	Old Northbound						Walnut Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:00AM	4	0	65	0	69	0	2	0	3	0	5	0	0	40	3	0	43	0	49	31	2	0	82	0	199
7:15AM	5	1	74	0	80	0	4	0	1	0	5	0	0	70	12	0	82	0	75	41	0	0	116	0	283
7:30AM	2	0	67	0	69	0	2	1	3	0	6	1	0	86	10	0	96	1	120	74	2	0	196	1	367
7:45AM	3	1	52	0	56	0	0	2	1	0	3	0	0	27	8	0	35	0	146	59	0	0	205	0	299
Hourly Total	14	2	258	0	274	0	8	3	8	0	19	1	0	223	33	0	256	1	390	205	4	0	599	1	1148
8:00AM	2	1	62	0	65	0	0	3	0	0	3	0	0	49	10	0	59	0	73	39	0	0	112	0	239
8:15AM	7	2	59	0	68	0	0	2	0	0	2	0	0	31	9	0	40	0	74	45	0	0	119	0	229
8:30AM	7	0	47	0	54	0	0	1	0	0	1	0	1	20	6	0	27	0	66	18	1	0	85	0	167
8:45AM	6	0	47	0	53	1	4	1	1	0	6	0	0	33	11	1	45	0	81	33	2	0	116	0	220
Hourly Total	22	3	215	0	240	1	4	7	1	0	12	0	1	133	36	1	171	0	294	135	3	0	432	0	855
11:00AM	11	0	89	0	100	0	1	1	2	0	4	0	0	33	13	0	46	0	70	38	0	0	108	0	258
11:15AM	10	1	69	1	81	0	1	1	0	0	2	0	0	42	9	0	51	0	63	42	0	0	105	0	239
11:30AM	13	1	85	0	99	2	0	0	0	0	0	0	0	37	7	0	44	0	71	52	0	0	123	0	266
11:45AM	8	1	100	0	109	0	0	0	1	0	1	0	1	33	16	0	50	0	76	47	0	0	123	0	283
Hourly Total	42	3	343	1	389	2	2	2	3	0	7	0	1	145	45	0	191	0	280	179	0	0	459	0	1046
12:00PM	10	2	111	0	123	1	1	0	1	0	2	0	0	43	5	0	48	0	74	46	0	0	120	0	293
12:15PM	10	1	95	0	106	1	0	1	0	0	1	0	0	33	8	0	41	0	95	39	1	0	135	0	283
12:30PM	9	1	72	0	82	2	0	1	0	0	1	1	0	58	4	0	62	0	78	40	0	0	118	0	263
12:45PM	5	0	79	0	84	0	0	1	0	0	1	0	0	45	13	0	58	0	102	31	1	0	134	0	277
Hourly Total	34	4	357	0	395	4	1	3	1	0	5	1	0	179	30	0	209	0	349	156	2	0	507	0	1116
4:00PM	12	3	122	0	137	0	1	1	1	0	3	0	0	45	9	0	54	0	113	52	1	0	166	0	360
4:15PM	11	3	108	0	122	0	2	0	3	0	5	1	1	67	12	0	80	0	94	44	1	0	139	0	346
4:30PM	9	1	106	0	116	0	2	0	0	0	2	2	0	56	8	0	64	0	95	59	0	0	154	0	336
4:45PM	11	0	116	0	127	0	0	0	0	0	0	1	0	76	14	0	90	0	76	46	0	0	122	0	339
Hourly Total	43	7	452	0	502	0	5	1	4	0	10	4	1	244	43	0	288	0	378	201	2	0	581	0	1381
5:00PM	8	0	146	0	154	0	0	0	0	0	0	2	0	59	12	0	71	0	90	55	2	0	147	0	372
5:15PM	11	0	107	0	118	4	4	0	0	0	4	2	1	79	7	0	87	0	83	51	1	0	135	0	344
5:30PM	4	0	112	0	116	0	2	1	3	0	6	0	3	53	7	0	63	0	60	57	2	0	119	0	304
5:45PM	6	1	87	0	94	0	1	2	0	0	3	2	2	51	11	0	64	0	71	43	4	0	118	0	279
Hourly Total	29	1	452	0	482	4	7	3	3	0	13	6	6	242	37	0	285	0	304	206	9	0	519	0	1299
Total	184	20	2077	1	2282	11	27	19	20	0	66	12	9	1166	224	1	1400	1	1995	1082	20	0	3097	1	6845
% Approach	8.1%	0.9%	91.0%	0%	-	-	40.9%	28.8%	30.3%	0%	-	-	0.6%	83.3%	16.0%	0.1%	-	-	64.4%	34.9%	0.6%	0%	-	-	-
% Total	2.7%	0.3%	30.3%	0%	33.3%	-	0.4%	0.3%	0.3%	0%	1.0%	-	0.1%	17.0%	3.3%	0%	20.5%	-	29.1%	15.8%	0.3%	0%	45.2%	-	-
Lights	131	20	1973	0	2124	-	27	19	18	0	64	-	9	1085	179	1	1274	-	1906	994	19	0	2919	-	6381
% Lights	71.2%	100%	95.0%	0%	93.1%	-	100%	100%	90.0%	0%	97.0%	-	100%	93.1%	79.9%	100%	91.0%	-	95.5%	91.9%	95.0%	0%	94.3%	-	93.2%
Single-Unit Trucks	15	0	30	1	46	-	0	0	1	0	1	-	0	19	11	0	30	-	33	21	1	0	55	-	132
% Single-Unit Trucks	8.2%	0%	1.4%	100%	2.0%	-	0%	0%	5.0%	0%	1.5%	-	0%	1.6%	4.9%	0%	2.1%	-	1.7%	1.9%	5.0%	0%	1.8%	-	1.9%
Articulated Trucks	38	0	68	0	106	-	0	0	0	0	0	-	0	57	34	0	91	-	49	66	0	0	115	-	312
% Articulated Trucks	20.7%	0%	3.3%	0%	4.6%	-	0%	0%	0%	0%	0%	-	0%	4.9%	15.2%	0%	6.5%	-	2.5%	6.1%	0%	0%	3.7%	-	4.6%
Buses	0	0	6	0	6	-	0	0	1	0	1	-	0	5	0	0	5	-	7	1	0	0	8	-	20
% Buses	0%	0%	0.3%	0%	0.3%	-	0%	0%	5.0%	0%	1.5%	-	0%	0.4%	0%	0%	0.4%	-	0.4%	0.1%	0%	0%	0.3%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	10	-	-	-	-	-	12	-	-	-	-	-	1	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	90.9%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	9.1%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

Olds St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929757, Location: 41.981498, -84.667313

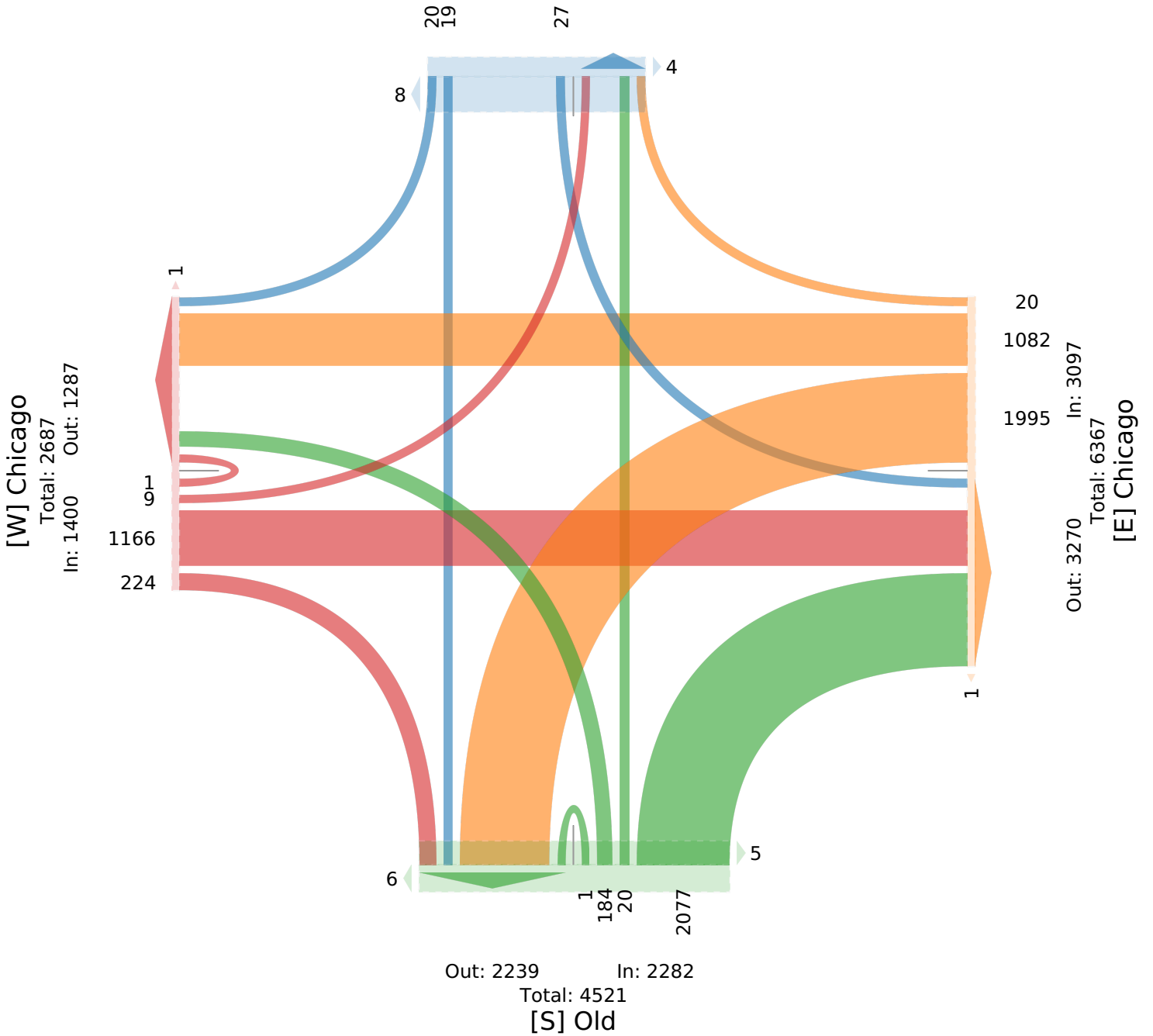


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Walnut

Total: 115

In: 66 Out: 49



Olds St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929757, Location: 41.981498, -84.667313



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

Leg Direction	Old Northbound						Walnut Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:15AM	5	1	74	0	80	0	4	0	1	0	5	0	0	70	12	0	82	0	75	41	0	0	116	0	283
7:30AM	2	0	67	0	69	0	2	1	3	0	6	1	0	86	10	0	96	1	120	74	2	0	196	1	367
7:45AM	3	1	52	0	56	0	0	2	1	0	3	0	0	27	8	0	35	0	146	59	0	0	205	0	299
8:00AM	2	1	62	0	65	0	0	3	0	0	3	0	0	49	10	0	59	0	73	39	0	0	112	0	239
Total	12	3	255	0	270	0	6	6	5	0	17	1	0	232	40	0	272	1	414	213	2	0	629	1	1188
% Approach	4.4%	1.1%	94.4%	0%	-	-	35.3%	35.3%	29.4%	0%	-	-	0%	85.3%	14.7%	0%	-	-	65.8%	33.9%	0.3%	0%	-	-	-
% Total	1.0%	0.3%	21.5%	0%	22.7%	-	0.5%	0.5%	0.4%	0%	1.4%	-	0%	19.5%	3.4%	0%	22.9%	-	34.8%	17.9%	0.2%	0%	52.9%	-	-
PHF	0.600	0.750	0.861	-	0.844	-	0.375	0.500	0.417	-	0.708	-	-	0.674	0.833	-	0.708	-	0.709	0.720	0.250	-	0.767	-	0.809
Lights	5	3	236	0	244	-	6	6	4	0	16	-	0	216	30	0	246	-	395	202	2	0	599	-	1105
% Lights	41.7%	100%	92.5%	0%	90.4%	-	100%	100%	80.0%	0%	94.1%	-	0%	93.1%	75.0%	0%	90.4%	-	95.4%	94.8%	100%	0%	95.2%	-	93.0%
Single-Unit Trucks	3	0	5	0	8	-	0	0	0	0	0	-	0	5	1	0	6	-	7	4	0	0	11	-	25
% Single-Unit Trucks	25.0%	0%	2.0%	0%	3.0%	-	0%	0%	0%	0%	0%	-	0%	2.2%	2.5%	0%	2.2%	-	1.7%	1.9%	0%	0%	1.7%	-	2.1%
Articulated Trucks	4	0	12	0	16	-	0	0	0	0	0	-	0	10	9	0	19	-	11	6	0	0	17	-	52
% Articulated Trucks	33.3%	0%	4.7%	0%	5.9%	-	0%	0%	0%	0%	0%	-	0%	4.3%	22.5%	0%	7.0%	-	2.7%	2.8%	0%	0%	2.7%	-	4.4%
Buses	0	0	2	0	2	-	0	0	1	0	1	-	0	1	0	0	1	-	1	1	0	0	2	-	6
% Buses	0%	0%	0.8%	0%	0.7%	-	0%	0%	20.0%	0%	5.9%	-	0%	0.4%	0%	0%	0.4%	-	0.2%	0.5%	0%	0%	0.3%	-	0.5%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

Olds St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929757, Location: 41.981498, -84.667313

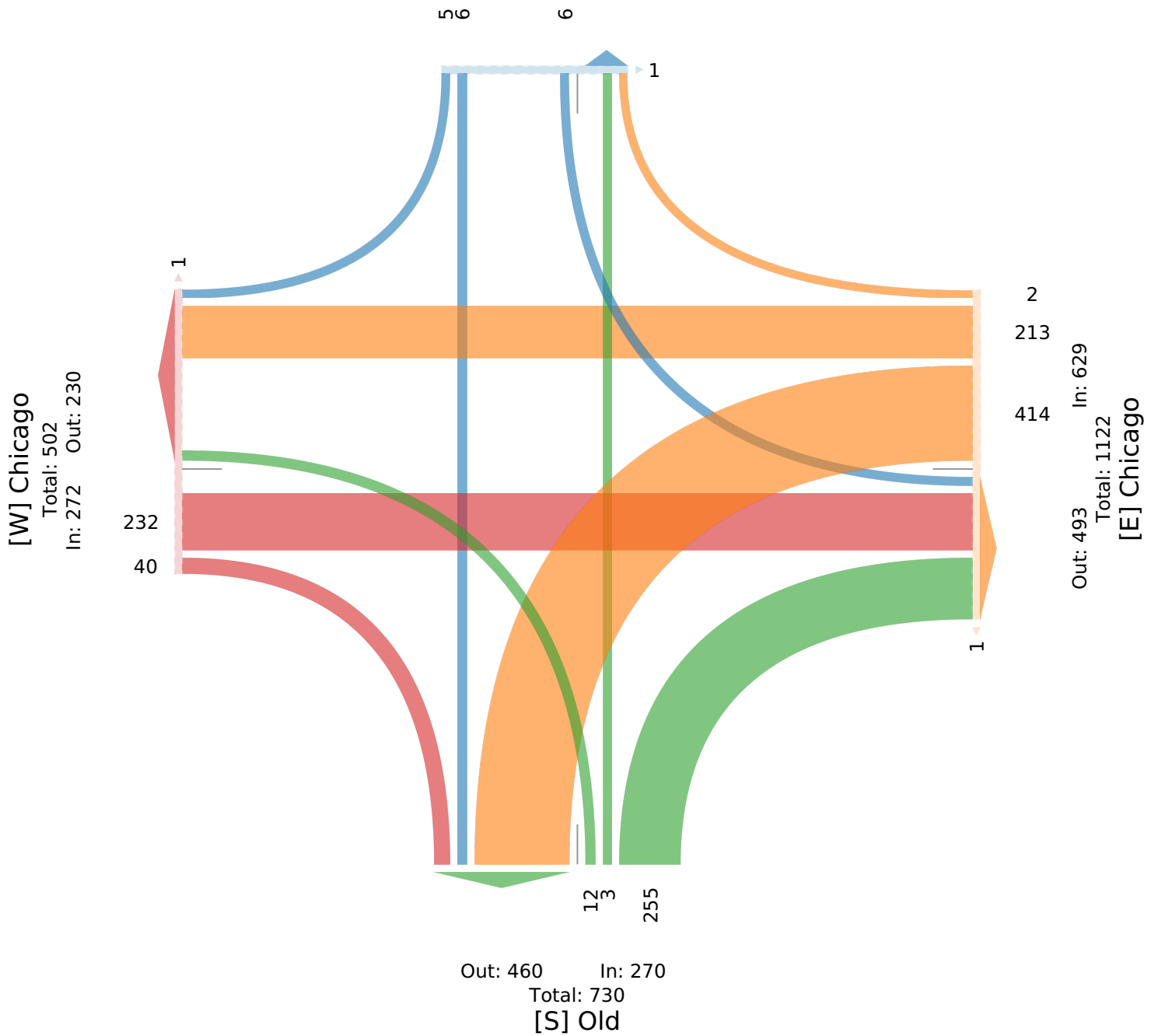


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Walnut

Total: 22

In: 17 Out: 5



Olds St. - TMC

Thu Mar 17, 2022

Midday Peak (11:30 AM - 12:30 PM)

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

All Movements

ID: 929757, Location: 41.981498, -84.667313



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

Leg Direction	Old Northbound						Walnut Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 11:30AM	13	1	85	0	99	2	0	0	0	0	0	0	0	37	7	0	44	0	71	52	0	0	123	0	266
11:45AM	8	1	100	0	109	0	0	0	1	0	1	0	1	33	16	0	50	0	76	47	0	0	123	0	283
12:00PM	10	2	111	0	123	1	1	0	1	0	2	0	0	43	5	0	48	0	74	46	0	0	120	0	293
12:15PM	10	1	95	0	106	1	0	1	0	0	1	0	0	33	8	0	41	0	95	39	1	0	135	0	283
Total	41	5	391	0	437	4	1	1	2	0	4	0	1	146	36	0	183	0	316	184	1	0	501	0	1125
% Approach	9.4%	1.1%	89.5%	0%	-	-	25.0%	25.0%	50.0%	0%	-	-	0.5%	79.8%	19.7%	0%	-	-	63.1%	36.7%	0.2%	0%	-	-	-
% Total	3.6%	0.4%	34.8%	0%	38.8%	-	0.1%	0.1%	0.2%	0%	0.4%	-	0.1%	13.0%	3.2%	0%	16.3%	-	28.1%	16.4%	0.1%	0%	44.5%	-	-
PHF	0.788	0.625	0.881	-	0.888	-	0.250	0.250	0.500	-	0.500	-	0.250	0.849	0.563	-	0.915	-	0.832	0.885	0.250	-	0.928	-	0.960
Lights	29	5	366	0	400	-	1	1	2	0	4	-	1	124	29	0	154	-	296	155	1	0	452	-	1010
% Lights	70.7%	100%	93.6%	0%	91.5%	-	100%	100%	100%	0%	100%	-	100%	84.9%	80.6%	0%	84.2%	-	93.7%	84.2%	100%	0%	90.2%	-	89.8%
Single-Unit Trucks	4	0	6	0	10	-	0	0	0	0	0	-	0	6	4	0	10	-	11	3	0	0	14	-	34
% Single-Unit Trucks	9.8%	0%	1.5%	0%	2.3%	-	0%	0%	0%	0%	0%	-	0%	4.1%	11.1%	0%	5.5%	-	3.5%	1.6%	0%	0%	2.8%	-	3.0%
Articulated Trucks	8	0	18	0	26	-	0	0	0	0	0	-	0	16	3	0	19	-	9	26	0	0	35	-	80
% Articulated Trucks	19.5%	0%	4.6%	0%	5.9%	-	0%	0%	0%	0%	0%	-	0%	11.0%	8.3%	0%	10.4%	-	2.8%	14.1%	0%	0%	7.0%	-	7.1%
Buses	0	0	1	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Buses	0%	0%	0.3%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Olds St. - TMC

Thu Mar 17, 2022

Midday Peak (11:30 AM - 12:30 PM)

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

All Movements

ID: 929757, Location: 41.981498, -84.667313

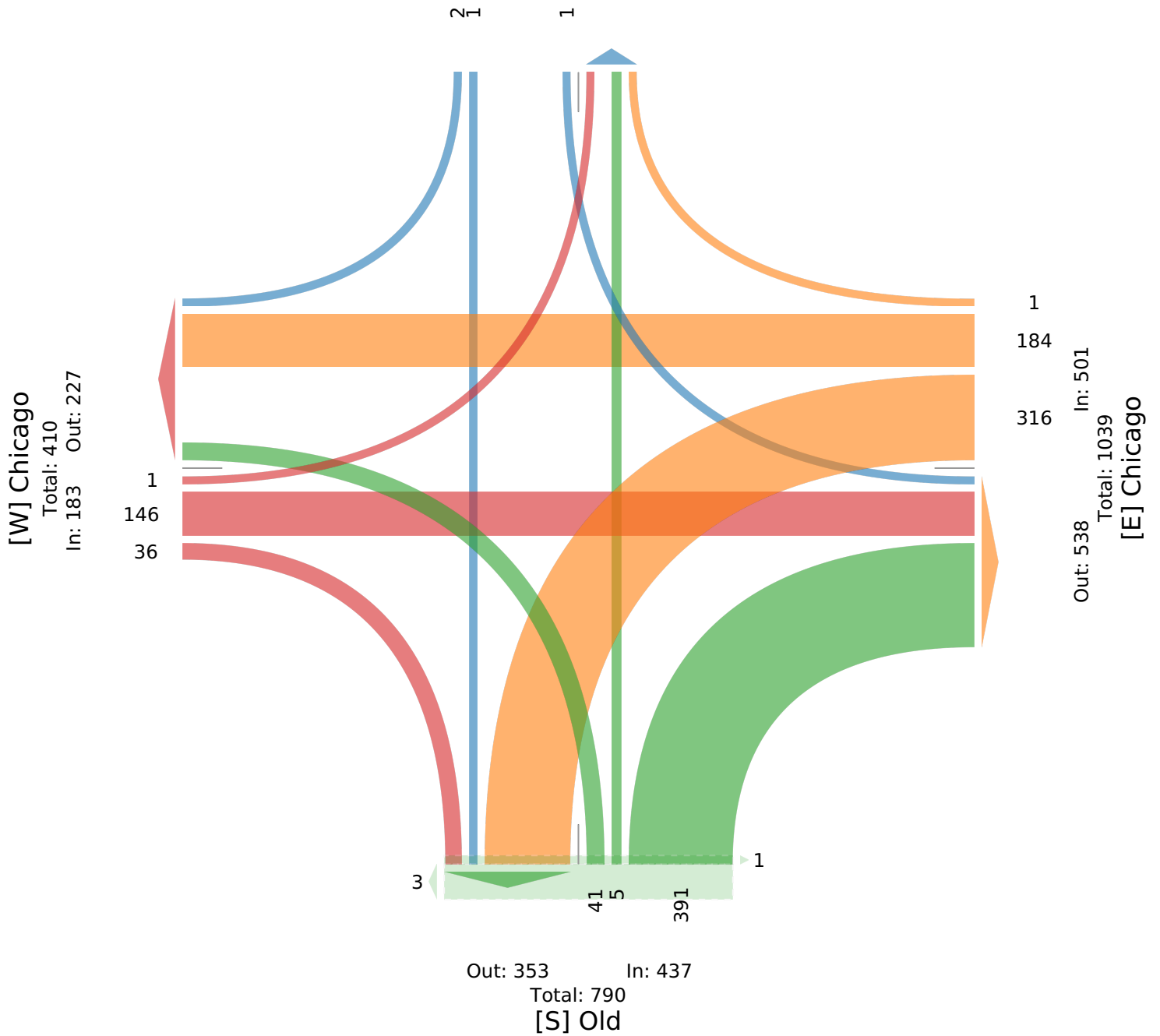


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Walnut

Total: 11

In: 4 Out: 7



Olds St. - TMC

Thu Mar 17, 2022

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

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

All Movements

ID: 929757, Location: 41.981498, -84.667313



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

Leg Direction	Old Northbound						Walnut Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 4:15PM	11	3	108	0	122	0	2	0	3	0	5	1	1	67	12	0	80	0	94	44	1	0	139	0	346
4:30PM	9	1	106	0	116	0	2	0	0	0	2	2	0	56	8	0	64	0	95	59	0	0	154	0	336
4:45PM	11	0	116	0	127	0	0	0	0	0	0	1	0	76	14	0	90	0	76	46	0	0	122	0	339
5:00PM	8	0	146	0	154	0	0	0	0	0	0	2	0	59	12	0	71	0	90	55	2	0	147	0	372
Total	39	4	476	0	519	0	4	0	3	0	7	6	1	258	46	0	305	0	355	204	3	0	562	0	1393
% Approach	7.5%	0.8%	91.7%	0%	-	-	57.1%	0%	42.9%	0%	-	-	0.3%	84.6%	15.1%	0%	-	-	63.2%	36.3%	0.5%	0%	-	-	-
% Total	2.8%	0.3%	34.2%	0%	37.3%	-	0.3%	0%	0.2%	0%	0.5%	-	0.1%	18.5%	3.3%	0%	21.9%	-	25.5%	14.6%	0.2%	0%	40.3%	-	-
PHF	0.886	0.333	0.815	-	0.843	-	0.500	-	0.250	-	0.350	-	0.250	0.849	0.821	-	0.847	-	0.934	0.864	0.375	-	0.912	-	0.936
Lights	33	4	463	0	500	-	4	0	3	0	7	-	1	248	37	0	286	-	344	195	3	0	542	-	1335
% Lights	84.6%	100%	97.3%	0%	96.3%	-	100%	0%	100%	0%	100%	-	100%	96.1%	80.4%	0%	93.8%	-	96.9%	95.6%	100%	0%	96.4%	-	95.8%
Single-Unit Trucks	2	0	2	0	4	-	0	0	0	0	0	-	0	1	3	0	4	-	1	2	0	0	3	-	11
% Single-Unit Trucks	5.1%	0%	0.4%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0%	0.4%	6.5%	0%	1.3%	-	0.3%	1.0%	0%	0%	0.5%	-	0.8%
Articulated Trucks	4	0	10	0	14	-	0	0	0	0	0	-	0	9	6	0	15	-	7	7	0	0	14	-	43
% Articulated Trucks	10.3%	0%	2.1%	0%	2.7%	-	0%	0%	0%	0%	0%	-	0%	3.5%	13.0%	0%	4.9%	-	2.0%	3.4%	0%	0%	2.5%	-	3.1%
Buses	0	0	1	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	3	0	0	0	3	-	4
% Buses	0%	0%	0.2%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.8%	0%	0%	0%	0.5%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Olds St. - TMC

Thu Mar 17, 2022

PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour

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

All Movements

ID: 929757, Location: 41.981498, -84.667313

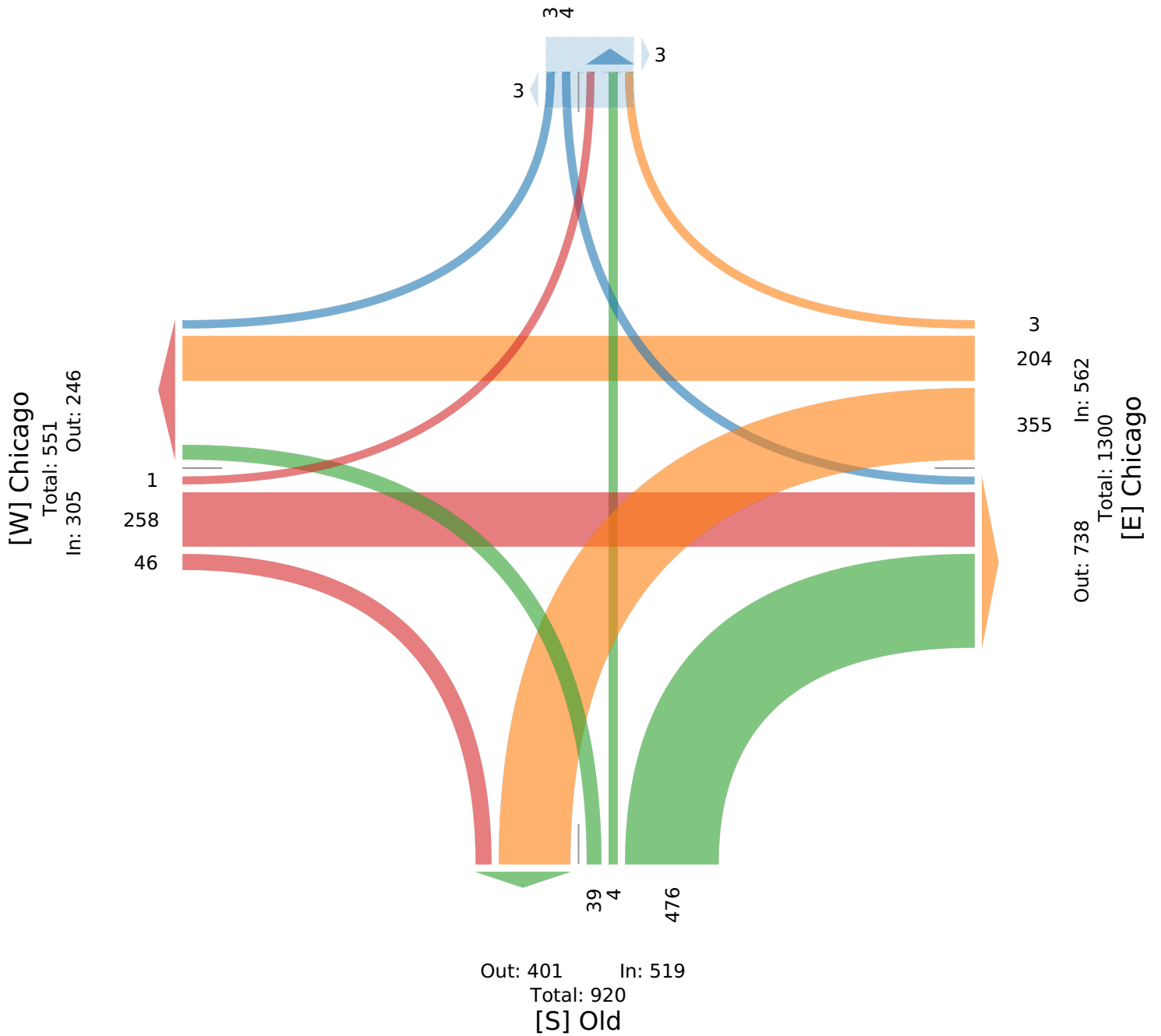


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Walnut

Total: 15

In: 7 Out: 8



Olds Street (M-99) - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929752, Location: 41.981495, -84.667315



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

Leg Direction	Olds Northbound						Walnut Southbound						Chicago Eastbound						Chicago Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-17 2:00PM	8	0	79	0	87	1	0	2	0	0	2	1	0	43	9	0	52	1	77	41	1	0	119	0	260
2:15PM	12	0	90	0	102	0	1	0	0	0	1	0	1	39	9	0	49	0	108	40	0	0	148	0	300
2:30PM	9	1	112	0	122	0	0	0	0	0	0	0	0	84	10	0	94	0	78	36	1	0	115	0	331
2:45PM	11	2	99	0	112	0	0	1	0	0	1	3	2	57	13	0	72	0	95	42	0	0	137	0	322
Hourly Total	40	3	380	0	423	1	1	3	0	0	4	4	3	223	41	0	267	1	358	159	2	0	519	0	1213
3:00PM	6	0	134	0	140	0	0	0	1	0	1	5	0	54	9	0	63	3	109	79	1	0	189	0	393
3:15PM	14	0	101	0	115	0	0	0	0	0	0	0	0	52	7	0	59	0	98	50	0	0	148	0	322
3:30PM	13	1	132	0	146	0	1	2	0	0	3	0	0	40	9	0	49	0	86	52	0	0	138	0	336
3:45PM	14	0	119	0	133	2	1	1	0	0	2	4	1	58	7	0	66	2	104	43	2	0	149	0	350
Hourly Total	47	1	486	0	534	2	2	3	1	0	6	9	1	204	32	0	237	5	397	224	3	0	624	0	1401
Total	87	4	866	0	957	3	3	6	1	0	10	13	4	427	73	0	504	6	755	383	5	0	1143	0	2614
% Approach	9.1%	0.4%	90.5%	0%	-	-	30.0%	60.0%	10.0%	0%	-	-	0.8%	84.7%	14.5%	0%	-	-	66.1%	33.5%	0.4%	0%	-	-	-
% Total	3.3%	0.2%	33.1%	0%	36.6%	-	0.1%	0.2%	0%	0%	0.4%	-	0.2%	16.3%	2.8%	0%	19.3%	-	28.9%	14.7%	0.2%	0%	43.7%	-	-
Lights	65	4	833	0	902	-	3	6	0	0	9	-	4	386	56	0	446	-	728	355	4	0	1087	-	2444
% Lights	74.7%	100%	96.2%	0%	94.3%	-	100%	100%	0%	0%	90.0%	-	100%	90.4%	76.7%	0%	88.5%	-	96.4%	92.7%	80.0%	0%	95.1%	-	93.5%
Single-Unit Trucks	5	0	11	0	16	-	0	0	0	0	0	-	0	12	5	0	17	-	3	5	0	0	8	-	41
% Single-Unit Trucks	5.7%	0%	1.3%	0%	1.7%	-	0%	0%	0%	0%	0%	-	0%	2.8%	6.8%	0%	3.4%	-	0.4%	1.3%	0%	0%	0.7%	-	1.6%
Articulated Trucks	16	0	16	0	32	-	0	0	0	0	0	-	0	24	12	0	36	-	19	21	0	0	40	-	108
% Articulated Trucks	18.4%	0%	1.8%	0%	3.3%	-	0%	0%	0%	0%	0%	-	0%	5.6%	16.4%	0%	7.1%	-	2.5%	5.5%	0%	0%	3.5%	-	4.1%
Buses	1	0	6	0	7	-	0	0	1	0	1	-	0	5	0	0	5	-	5	2	1	0	8	-	21
% Buses	1.1%	0%	0.7%	0%	0.7%	-	0%	0%	100%	0%	10.0%	-	0%	1.2%	0%	0%	1.0%	-	0.7%	0.5%	20.0%	0%	0.7%	-	0.8%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	13	-	-	-	-	-	6	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	66.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	33.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	

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

Olds Street (M-99) - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929752, Location: 41.981495, -84.667315

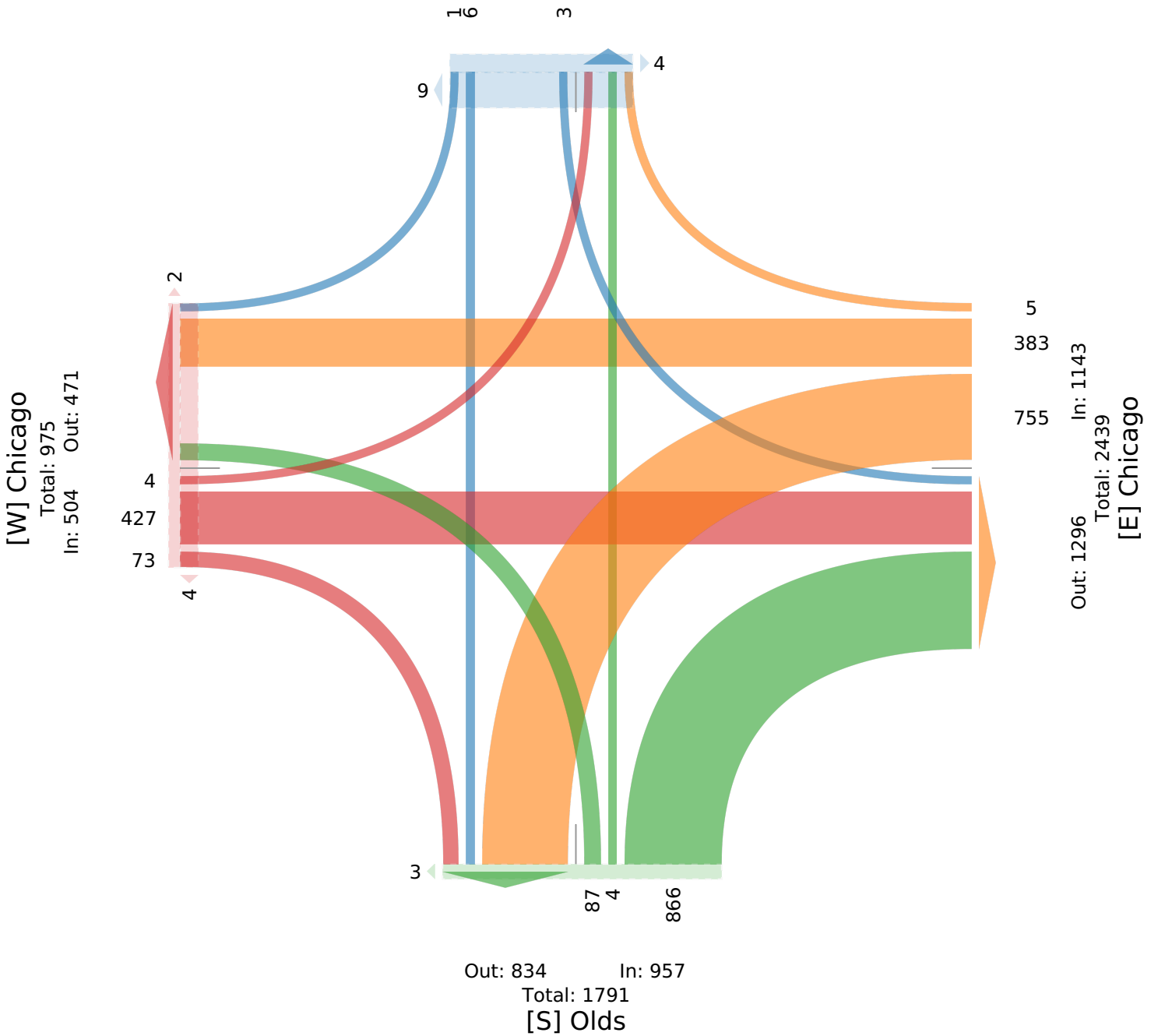


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Walnut

Total: 23

In: 10 Out: 13



Olds Street (M-99) - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

All Movements

ID: 929752, Location: 41.981495, -84.667315



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

Leg Direction	Olds Northbound						Walnut Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 3:00PM	6	0	134	0	140	0	0	0	1	0	1	5	0	54	9	0	63	3	109	79	1	0	189	0	393
3:15PM	14	0	101	0	115	0	0	0	0	0	0	0	0	52	7	0	59	0	98	50	0	0	148	0	322
3:30PM	13	1	132	0	146	0	1	2	0	0	3	0	0	40	9	0	49	0	86	52	0	0	138	0	336
3:45PM	14	0	119	0	133	2	1	1	0	0	2	4	1	58	7	0	66	2	104	43	2	0	149	0	350
Total	47	1	486	0	534	2	2	3	1	0	6	9	1	204	32	0	237	5	397	224	3	0	624	0	1401
% Approach	8.8%	0.2%	91.0%	0%	-	-	33.3%	50.0%	16.7%	0%	-	-	0.4%	86.1%	13.5%	0%	-	-	63.6%	35.9%	0.5%	0%	-	-	-
% Total	3.4%	0.1%	34.7%	0%	38.1%	-	0.1%	0.2%	0.1%	0%	0.4%	-	0.1%	14.6%	2.3%	0%	16.9%	-	28.3%	16.0%	0.2%	0%	44.5%	-	-
PHF	0.839	0.250	0.907	-	0.914	-	0.500	0.375	0.250	-	0.500	-	0.250	0.879	0.889	-	0.898	-	0.911	0.709	0.375	-	0.825	-	0.891
Lights	35	1	473	0	509	-	2	3	0	0	5	-	1	182	29	0	212	-	381	209	2	0	592	-	1318
% Lights	74.5%	100%	97.3%	0%	95.3%	-	100%	100%	0%	0%	83.3%	-	100%	89.2%	90.6%	0%	89.5%	-	96.0%	93.3%	66.7%	0%	94.9%	-	94.1%
Single-Unit Trucks	2	0	6	0	8	-	0	0	0	0	0	-	0	6	1	0	7	-	2	2	0	0	4	-	19
% Single-Unit Trucks	4.3%	0%	1.2%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0%	2.9%	3.1%	0%	3.0%	-	0.5%	0.9%	0%	0%	0.6%	-	1.4%
Articulated Trucks	9	0	3	0	12	-	0	0	0	0	0	-	0	11	2	0	13	-	11	11	0	0	22	-	47
% Articulated Trucks	19.1%	0%	0.6%	0%	2.2%	-	0%	0%	0%	0%	0%	-	0%	5.4%	6.3%	0%	5.5%	-	2.8%	4.9%	0%	0%	3.5%	-	3.4%
Buses	1	0	4	0	5	-	0	0	1	0	1	-	0	5	0	0	5	-	3	2	1	0	6	-	17
% Buses	2.1%	0%	0.8%	0%	0.9%	-	0%	0%	100%	0%	16.7%	-	0%	2.5%	0%	0%	2.1%	-	0.8%	0.9%	33.3%	0%	1.0%	-	1.2%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	9	-	-	-	-	-	5	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	50.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	50.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-

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

Olds Street (M-99) - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

All Movements

ID: 929752, Location: 41.981495, -84.667315

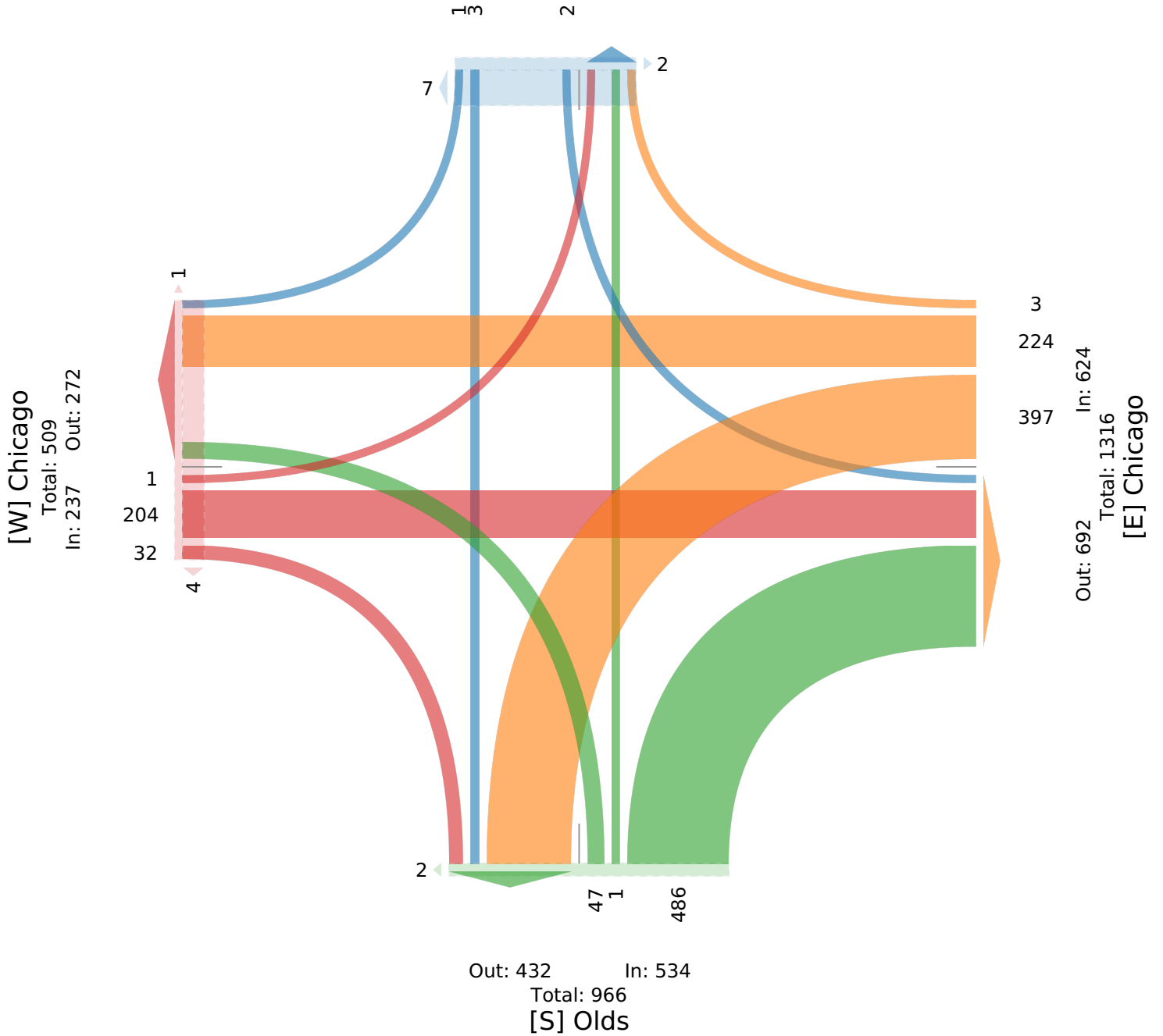


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Walnut

Total: 11

In: 6 Out: 5



West St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929758, Location: 41.983142, -84.663463



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

Leg Direction	West Northbound						Water Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:00AM	9	0	0	0	9	0	1	1	2	0	4	0	6	91	7	0	104	0	0	74	3	0	77	0	194
7:15AM	19	0	2	0	21	1	1	0	9	0	10	0	8	123	10	0	141	0	2	110	4	0	116	1	288
7:30AM	38	1	0	0	39	0	0	1	25	0	26	2	11	136	9	0	156	0	4	138	2	0	144	0	365
7:45AM	44	0	0	0	44	0	1	2	10	0	13	1	5	70	12	0	87	0	0	159	3	0	162	0	306
Hourly Total	110	1	2	0	113	1	3	4	46	0	53	3	30	420	38	0	488	0	6	481	12	0	499	1	1153
8:00AM	12	3	0	0	15	0	0	0	6	0	6	16	7	90	9	0	106	0	2	102	1	0	105	0	232
8:15AM	12	0	2	0	14	0	1	0	8	0	9	0	6	84	7	0	97	0	1	94	0	0	95	0	215
8:30AM	6	0	2	0	8	0	0	1	8	0	9	0	6	59	6	0	71	0	0	73	2	0	75	0	163
8:45AM	11	0	2	0	13	0	0	0	4	0	4	16	5	67	8	0	80	0	1	105	1	0	107	0	204
Hourly Total	41	3	6	0	50	0	1	1	26	0	28	32	24	300	30	0	354	0	4	374	4	0	382	0	814
11:00AM	6	0	1	0	7	1	0	2	3	0	5	0	6	97	11	0	114	1	2	93	1	0	96	0	222
11:15AM	17	0	1	0	18	1	0	0	6	0	6	0	12	85	12	0	109	0	2	78	3	0	83	1	216
11:30AM	13	1	1	0	15	2	1	2	5	0	8	0	8	98	13	0	119	0	0	109	1	0	110	0	252
11:45AM	19	2	0	0	21	1	1	1	9	0	11	0	12	104	21	0	137	0	1	89	1	0	91	0	260
Hourly Total	55	3	3	0	61	5	2	5	23	0	30	0	38	384	57	0	479	1	5	369	6	0	380	1	950
12:00PM	12	1	1	0	14	1	3	2	10	0	15	0	7	126	20	0	153	0	2	98	3	0	103	0	285
12:15PM	23	3	1	0	27	1	0	2	12	0	14	0	14	91	13	0	118	0	5	94	3	0	102	0	261
12:30PM	17	3	2	0	22	0	1	1	6	0	8	2	7	98	15	0	120	0	2	96	5	0	103	0	253
12:45PM	27	1	3	0	31	0	1	3	7	0	11	3	7	122	10	0	139	0	3	92	2	0	97	1	278
Hourly Total	79	8	7	0	94	2	5	8	35	0	48	5	35	437	58	0	530	0	12	380	13	0	405	1	1077
4:00PM	18	3	1	0	22	1	2	3	14	0	19	0	7	158	13	0	178	0	1	128	0	0	129	0	348
4:15PM	21	3	2	0	26	2	2	1	6	0	9	0	6	157	23	0	186	0	2	113	3	0	118	1	339
4:30PM	19	0	0	0	19	1	1	4	3	0	8	4	9	142	16	0	167	0	1	124	3	0	128	0	322
4:45PM	18	2	0	0	20	1	1	0	9	0	10	0	13	161	16	0	190	0	0	96	6	0	102	0	322
Hourly Total	76	8	3	0	87	5	6	8	32	0	46	4	35	618	68	0	721	0	4	461	12	0	477	1	1331
5:00PM	15	1	2	0	18	0	1	1	6	0	8	2	13	175	16	0	204	0	2	129	2	0	133	1	363
5:15PM	14	1	3	0	18	2	1	0	9	0	10	3	14	160	23	0	197	0	0	121	7	0	128	2	353
5:30PM	14	3	2	0	19	4	1	2	5	0	8	2	15	140	13	0	168	0	0	105	0	0	105	0	300
5:45PM	14	0	3	0	17	1	1	0	7	0	8	2	10	123	18	0	151	0	3	99	2	0	104	4	280
Hourly Total	57	5	10	0	72	7	4	3	27	0	34	9	52	598	70	0	720	0	5	454	11	0	470	7	1296
Total	418	28	31	0	477	20	21	29	189	0	239	53	214	2757	321	0	3292	1	36	2519	58	0	2613	11	6621
% Approach	87.6%	5.9%	6.5%	0%	-	-	8.8%	12.1%	79.1%	0%	-	-	6.5%	83.7%	9.8%	0%	-	-	1.4%	96.4%	2.2%	0%	-	-	-
% Total	6.3%	0.4%	0.5%	0%	7.2%	-	0.3%	0.4%	2.9%	0%	3.6%	-	3.2%	41.6%	4.8%	0%	49.7%	-	0.5%	38.0%	0.9%	0%	39.5%	-	-
Lights	413	28	31	0	472	-	20	28	189	0	237	-	212	2575	317	0	3104	-	35	2350	58	0	2443	-	6256
% Lights	98.8%	100%	100%	0%	99.0%	-	95.2%	96.6%	100%	0%	99.2%	-	99.1%	93.4%	98.8%	0%	94.3%	-	97.2%	93.3%	100%	0%	93.5%	-	94.5%
Single-Unit Trucks	4	0	0	0	4	-	0	0	0	0	0	-	2	47	1	0	50	-	1	48	0	0	49	-	103
% Single-Unit Trucks	1.0%	0%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0.9%	1.7%	0.3%	0%	1.5%	-	2.8%	1.9%	0%	0%	1.9%	-	1.6%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	125	2	0	127	-	0	114	0	0	114	-	241
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	4.5%	0.6%	0%	3.9%	-	0%	4.5%	0%	0%	4.4%	-	3.6%
Buses	1	0	0	0	1	-	1	0	0	0	1	-	0	10	1	0	11	-	0	7	0	0	7	-	20
% Buses	0.2%	0%	0%	0%	0.2%	-	4.8%	0%	0%	0%	0.4%	-	0%	0.4%	0.3%	0%	0.3%	-	0%	0.3%	0%	0%	0.3%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	3.4%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	19	-	-	-	-	-	53	-	-	-	-	-	1	-	-	-	-	-	10	
% Pedestrians	-	-	-	-	-	95.0%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	90.9%	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	5.0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	9.1%	

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

West St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

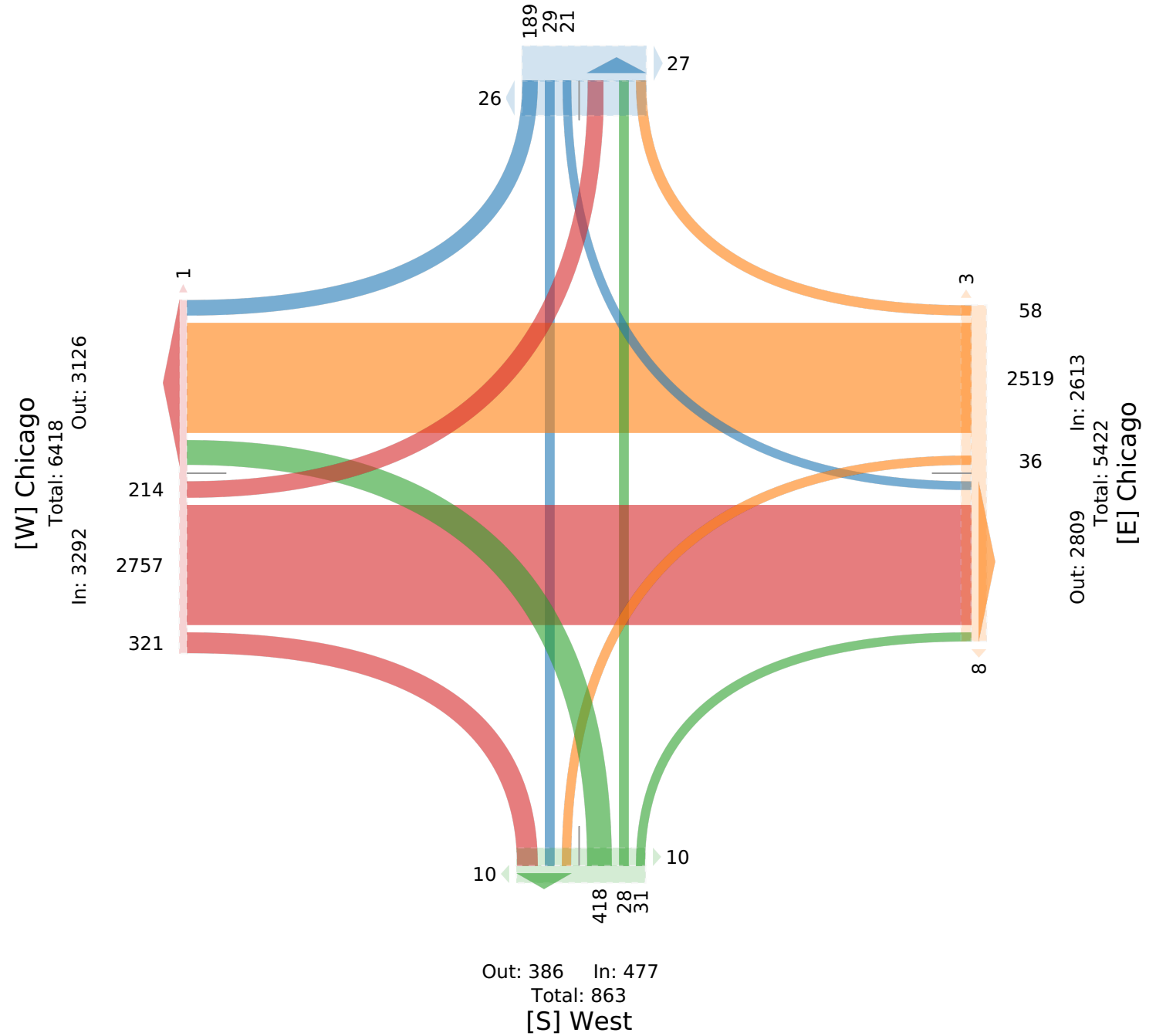
ID: 929758, Location: 41.983142, -84.663463



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

[N] Water

Total: 539
In: 239 Out: 300



West St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929758, Location: 41.983142, -84.663463



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

Leg Direction	West Northbound						Water Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:15AM	19	0	2	0	21	1	1	0	9	0	10	0	8	123	10	0	141	0	2	110	4	0	116	1	288
7:30AM	38	1	0	0	39	0	0	1	25	0	26	2	11	136	9	0	156	0	4	138	2	0	144	0	365
7:45AM	44	0	0	0	44	0	1	2	10	0	13	1	5	70	12	0	87	0	0	159	3	0	162	0	306
8:00AM	12	3	0	0	15	0	0	0	6	0	6	16	7	90	9	0	106	0	2	102	1	0	105	0	232
Total	113	4	2	0	119	1	2	3	50	0	55	19	31	419	40	0	490	0	8	509	10	0	527	1	1191
% Approach	95.0%	3.4%	1.7%	0%	-	-	3.6%	5.5%	90.9%	0%	-	-	6.3%	85.5%	8.2%	0%	-	-	1.5%	96.6%	1.9%	0%	-	-	-
% Total	9.5%	0.3%	0.2%	0%	10.0%	-	0.2%	0.3%	4.2%	0%	4.6%	-	2.6%	35.2%	3.4%	0%	41.1%	-	0.7%	42.7%	0.8%	0%	44.2%	-	-
PHF	0.642	0.333	0.250	-	0.676	-	0.500	0.375	0.500	-	0.529	-	0.705	0.770	0.833	-	0.785	-	0.500	0.800	0.625	-	0.813	-	0.816
Lights	112	4	2	0	118	-	1	3	50	0	54	-	31	384	38	0	453	-	8	481	10	0	499	-	1124
% Lights	99.1%	100%	100%	0%	99.2%	-	50.0%	100%	100%	0%	98.2%	-	100%	91.6%	95.0%	0%	92.4%	-	100%	94.5%	100%	0%	94.7%	-	94.4%
Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	10	0	0	10	-	0	9	0	0	9	-	19
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	2.4%	0%	0%	2.0%	-	0%	1.8%	0%	0%	1.7%	-	1.6%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	21	2	0	23	-	0	18	0	0	18	-	41
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	5.0%	5.0%	0%	4.7%	-	0%	3.5%	0%	0%	3.4%	-	3.4%
Buses	1	0	0	0	1	-	1	0	0	0	1	-	0	4	0	0	4	-	0	1	0	0	1	-	7
% Buses	0.9%	0%	0%	0%	0.8%	-	50.0%	0%	0%	0%	1.8%	-	0%	1.0%	0%	0%	0.8%	-	0%	0.2%	0%	0%	0.2%	-	0.6%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	1	-	-	-	-	-	19	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	100%	-

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

West St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929758, Location: 41.983142, -84.663463



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

[N] Water

Total: 100
In: 55 Out: 45

50 32

18

1

1

10

509

8

Out: 423 In: 527

Total: 950

[E] Chicago

[W] Chicago

Total: 1162

In: 490

Out: 672

31

419

40

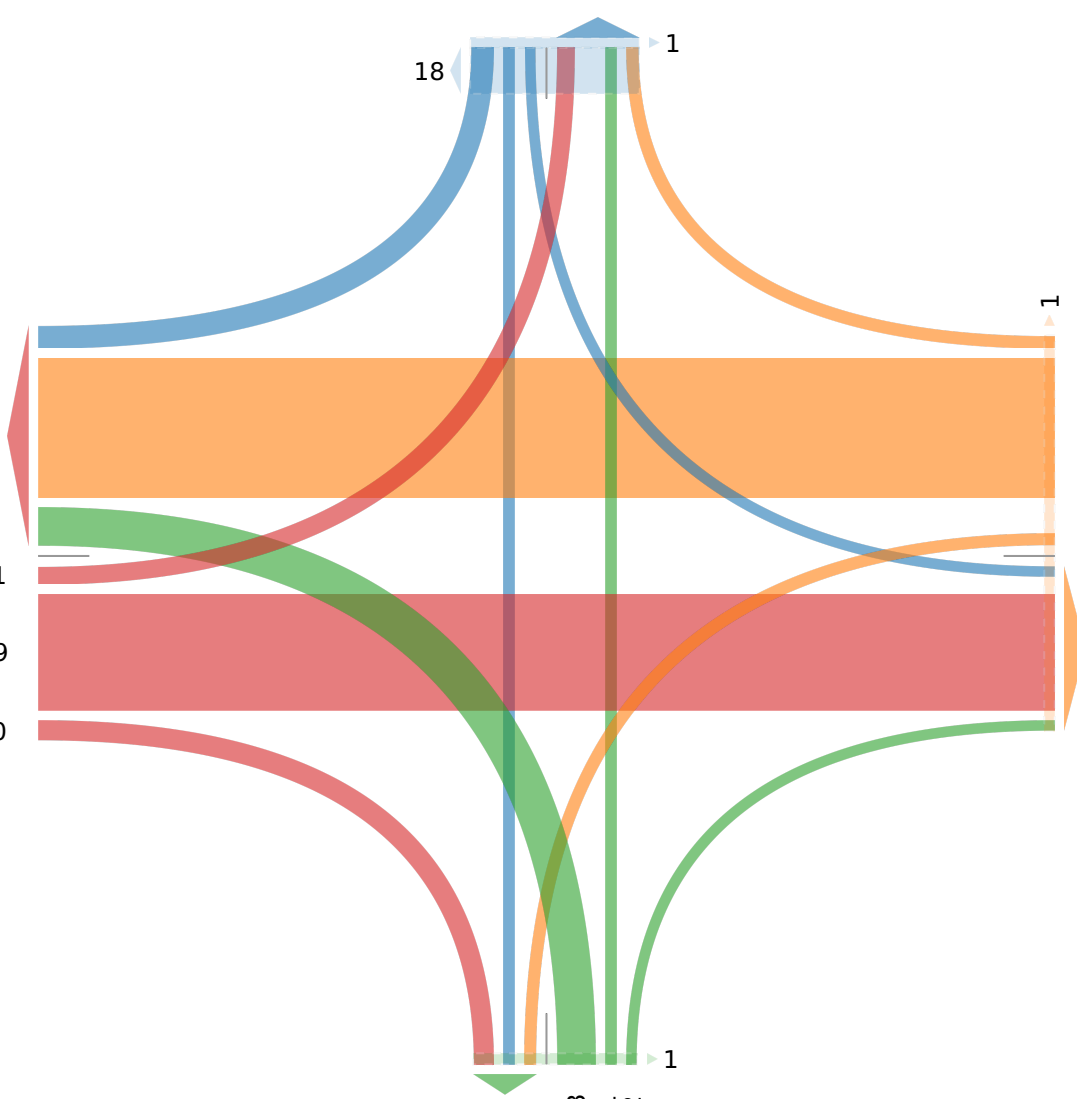
113

1

Out: 51 In: 119

Total: 170

[S] West



West St. - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929758, Location: 41.983142, -84.663463



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

Leg Direction	West Northbound						Water Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 12:00PM	12	1	1	0	14	1	3	2	10	0	15	0	7	126	20	0	153	0	2	98	3	0	103	0	285
12:15PM	23	3	1	0	27	1	0	2	12	0	14	0	14	91	13	0	118	0	5	94	3	0	102	0	261
12:30PM	17	3	2	0	22	0	1	1	6	0	8	2	7	98	15	0	120	0	2	96	5	0	103	0	253
12:45PM	27	1	3	0	31	0	1	3	7	0	11	3	7	122	10	0	139	0	3	92	2	0	97	1	278
Total	79	8	7	0	94	2	5	8	35	0	48	5	35	437	58	0	530	0	12	380	13	0	405	1	1077
% Approach	84.0%	8.5%	7.4%	0%	-	-	10.4%	16.7%	72.9%	0%	-	-	6.6%	82.5%	10.9%	0%	-	-	3.0%	93.8%	3.2%	0%	-	-	-
% Total	7.3%	0.7%	0.6%	0%	8.7%	-	0.5%	0.7%	3.2%	0%	4.5%	-	3.2%	40.6%	5.4%	0%	49.2%	-	1.1%	35.3%	1.2%	0%	37.6%	-	-
PHF	0.731	0.667	0.583	-	0.758	-	0.417	0.667	0.729	-	0.800	-	0.625	0.867	0.725	-	0.866	-	0.600	0.969	0.650	-	0.983	-	0.945
Lights	77	8	7	0	92	-	5	8	35	0	48	-	35	388	58	0	481	-	11	349	13	0	373	-	994
% Lights	97.5%	100%	100%	0%	97.9%	-	100%	100%	100%	0%	100%	-	100%	88.8%	100%	0%	90.8%	-	91.7%	91.8%	100%	0%	92.1%	-	92.3%
Single-Unit Trucks	2	0	0	0	2	-	0	0	0	0	0	-	0	13	0	0	13	-	1	7	0	0	8	-	23
% Single-Unit Trucks	2.5%	0%	0%	0%	2.1%	-	0%	0%	0%	0%	0%	-	0%	3.0%	0%	0%	2.5%	-	8.3%	1.8%	0%	0%	2.0%	-	2.1%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	36	0	0	36	-	0	24	0	0	24	-	60
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	8.2%	0%	0%	6.8%	-	0%	6.3%	0%	0%	5.9%	-	5.6%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

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

West St. - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929758, Location: 41.983142, -84.663463



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

[N] Water

Total: 104

In: 48 Out: 56

35 35



[W] Chicago

Total: 1024

In: 530

Out: 494

35

437

58



79 87

Out: 78 In: 94

Total: 172

[S] West

13

380

12

Out: 449 In: 405

Total: 854

[E] Chicago

1

West St. - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 929758, Location: 41.983142, -84.663463



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

Leg Direction	West Northbound						Water Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 4:30PM	19	0	0	0	19	1	1	4	3	0	8	4	9	142	16	0	167	0	1	124	3	0	128	0	322
4:45PM	18	2	0	0	20	1	1	0	9	0	10	0	13	161	16	0	190	0	0	96	6	0	102	0	322
5:00PM	15	1	2	0	18	0	1	1	6	0	8	2	13	175	16	0	204	0	2	129	2	0	133	1	363
5:15PM	14	1	3	0	18	2	1	0	9	0	10	3	14	160	23	0	197	0	0	121	7	0	128	2	353
Total	66	4	5	0	75	4	4	5	27	0	36	9	49	638	71	0	758	0	3	470	18	0	491	3	1360
% Approach	88.0%	5.3%	6.7%	0%	-	-	11.1%	13.9%	75.0%	0%	-	-	6.5%	84.2%	9.4%	0%	-	-	0.6%	95.7%	3.7%	0%	-	-	-
% Total	4.9%	0.3%	0.4%	0%	5.5%	-	0.3%	0.4%	2.0%	0%	2.6%	-	3.6%	46.9%	5.2%	0%	55.7%	-	0.2%	34.6%	1.3%	0%	36.1%	-	-
PHF	0.868	0.500	0.417	-	0.938	-	1.000	0.333	0.750	-	0.875	-	0.875	0.911	0.772	-	0.929	-	0.375	0.911	0.643	-	0.923	-	0.936
Lights	66	4	5	0	75	-	4	4	27	0	35	-	49	619	70	0	738	-	3	450	18	0	471	-	1319
% Lights	100%	100%	100%	0%	100%	-	100%	80.0%	100%	0%	97.2%	-	100%	97.0%	98.6%	0%	97.4%	-	100%	95.7%	100%	0%	95.9%	-	97.0%
Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	5	1	0	6	-	0	4	0	0	4	-	10
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.8%	1.4%	0%	0.8%	-	0%	0.9%	0%	0%	0.8%	-	0.7%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	14	0	0	14	-	0	14	0	0	14	-	28
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	2.2%	0%	0%	1.8%	-	0%	3.0%	0%	0%	2.9%	-	2.1%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	2
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0.1%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	20.0%	0%	0%	2.8%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	4	-	-	-	-	-	9	-	-	-	-	-	0	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	0%	-

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

West St. - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

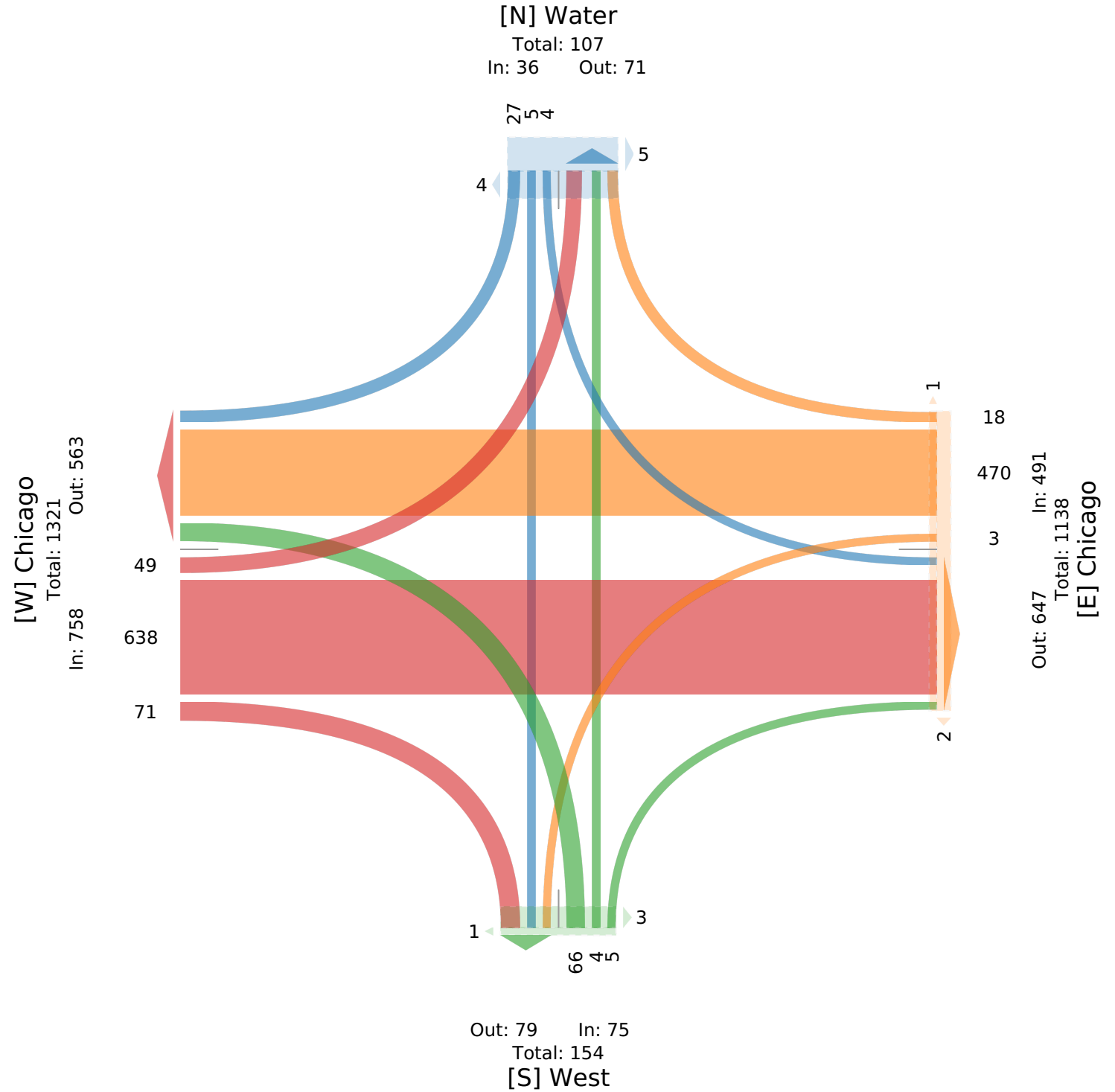
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929758, Location: 41.983142, -84.663463



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



West St. - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929753, Location: 41.983142, -84.663463



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

Leg Direction	West Northbound						Water Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 2:00PM	16	0	0	0	16	0	1	1	8	0	10	1	3	110	15	0	128	2	0	101	1	0	102	2	256
2:15PM	22	1	3	0	26	0	1	0	4	0	5	1	4	106	14	0	124	0	3	105	1	0	109	0	264
2:30PM	14	1	0	0	15	1	5	1	6	0	12	0	5	168	22	0	195	0	1	97	2	0	100	2	322
2:45PM	31	3	3	0	37	0	1	4	7	0	12	8	10	133	20	0	163	1	3	109	1	0	113	0	325
Hourly Total	83	5	6	0	94	1	8	6	25	0	39	10	22	517	71	0	610	3	7	412	5	0	424	4	1167
3:00PM	61	2	3	0	66	1	2	2	10	0	14	4	9	165	20	0	194	0	2	121	0	0	123	5	397
3:15PM	38	1	0	0	39	0	2	1	6	0	9	0	5	134	16	0	155	0	3	113	2	0	118	0	321
3:30PM	15	0	6	0	21	0	1	1	6	0	8	3	11	152	14	0	177	1	1	109	1	0	111	2	317
3:45PM	16	0	1	0	17	1	1	3	12	0	16	2	12	152	10	0	174	0	1	127	2	0	130	3	337
Hourly Total	130	3	10	0	143	2	6	7	34	0	47	9	37	603	60	0	700	1	7	470	5	0	482	10	1372
Total	213	8	16	0	237	3	14	13	59	0	86	19	59	1120	131	0	1310	4	14	882	10	0	906	14	2539
% Approach	89.9%	3.4%	6.8%	0%	-	-	16.3%	15.1%	68.6%	0%	-	-	4.5%	85.5%	10.0%	0%	-	-	1.5%	97.4%	1.1%	0%	-	-	-
% Total	8.4%	0.3%	0.6%	0%	9.3%	-	0.6%	0.5%	2.3%	0%	3.4%	-	2.3%	44.1%	5.2%	0%	51.6%	-	0.6%	34.7%	0.4%	0%	35.7%	-	-
Lights	207	8	16	0	231	-	14	12	59	0	85	-	57	1049	128	0	1234	-	14	831	10	0	855	-	2405
% Lights	97.2%	100%	100%	0%	97.5%	-	100%	92.3%	100%	0%	98.8%	-	96.6%	93.7%	97.7%	0%	94.2%	-	100%	94.2%	100%	0%	94.4%	-	94.7%
Single-Unit Trucks	2	0	0	0	2	-	0	1	0	0	1	-	1	22	3	0	26	-	0	9	0	0	9	-	38
% Single-Unit Trucks	0.9%	0%	0%	0%	0.8%	-	0%	7.7%	0%	0%	1.2%	-	1.7%	2.0%	2.3%	0%	2.0%	-	0%	1.0%	0%	0%	1.0%	-	1.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	40	0	0	40	-	0	39	0	0	39	-	79
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	3.6%	0%	0%	3.1%	-	0%	4.4%	0%	0%	4.3%	-	3.1%
Buses	4	0	0	0	4	-	0	0	0	0	0	-	1	9	0	0	10	-	0	3	0	0	3	-	17
% Buses	1.9%	0%	0%	0%	1.7%	-	0%	0%	0%	0%	0%	-	1.7%	0.8%	0%	0%	0.8%	-	0%	0.3%	0%	0%	0.3%	-	0.7%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	19	-	-	-	-	-	4	-	-	-	-	-	14	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

West St. - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929753, Location: 41.983142, -84.663463



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

[N] Water

Total: 163

In: 86 Out: 77

59
13
14

13

6

2

8

10

In: 906

Total: 2056

14

Out: 1150

[E] Chicago

[W] Chicago

Total: 2464

In: 1310

Out: 1154

59

1120

131

2

2

1

213

8

16

Out: 158 In: 237

Total: 395

[S] West

West St. - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

All Movements

ID: 929753, Location: 41.983142, -84.663463



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

Leg Direction	West Northbound						Water Southbound						Chicago Eastbound						Chicago Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 3:00PM	61	2	3	0	66	1	2	2	10	0	14	4	9	165	20	0	194	0	2	121	0	0	123	5	397
3:15PM	38	1	0	0	39	0	2	1	6	0	9	0	5	134	16	0	155	0	3	113	2	0	118	0	321
3:30PM	15	0	6	0	21	0	1	1	6	0	8	3	11	152	14	0	177	1	1	109	1	0	111	2	317
3:45PM	16	0	1	0	17	1	1	3	12	0	16	2	12	152	10	0	174	0	1	127	2	0	130	3	337
Total	130	3	10	0	143	2	6	7	34	0	47	9	37	603	60	0	700	1	7	470	5	0	482	10	1372
% Approach	90.9%	2.1%	7.0%	0%	-	-	12.8%	14.9%	72.3%	0%	-	-	5.3%	86.1%	8.6%	0%	-	-	1.5%	97.5%	1.0%	0%	-	-	-
% Total	9.5%	0.2%	0.7%	0%	10.4%	-	0.4%	0.5%	2.5%	0%	3.4%	-	2.7%	44.0%	4.4%	0%	51.0%	-	0.5%	34.3%	0.4%	0%	35.1%	-	-
PHF	0.533	0.375	0.417	-	0.542	-	0.750	0.583	0.708	-	0.734	-	0.771	0.914	0.750	-	0.902	-	0.583	0.925	0.625	-	0.927	-	0.864
Lights	125	3	10	0	138	-	6	6	34	0	46	-	35	569	59	0	663	-	7	443	5	0	455	-	1302
% Lights	96.2%	100%	100%	0%	96.5%	-	100%	85.7%	100%	0%	97.9%	-	94.6%	94.4%	98.3%	0%	94.7%	-	100%	94.3%	100%	0%	94.4%	-	94.9%
Single-Unit Trucks	1	0	0	0	1	-	0	1	0	0	1	-	1	12	1	0	14	-	0	4	0	0	4	-	20
% Single-Unit Trucks	0.8%	0%	0%	0%	0.7%	-	0%	14.3%	0%	0%	2.1%	-	2.7%	2.0%	1.7%	0%	2.0%	-	0%	0.9%	0%	0%	0.8%	-	1.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	14	0	0	14	-	0	21	0	0	21	-	35
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	2.3%	0%	0%	2.0%	-	0%	4.5%	0%	0%	4.4%	-	2.6%
Buses	4	0	0	0	4	-	0	0	0	0	0	-	1	8	0	0	9	-	0	2	0	0	2	-	15
% Buses	3.1%	0%	0%	0%	2.8%	-	0%	0%	0%	0%	0%	-	2.7%	1.3%	0%	0%	1.3%	-	0%	0.4%	0%	0%	0.4%	-	1.1%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	2	-	-	-	-	-	9	-	-	-	-	-	1	-	-	-	-	-	10	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

West St. - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

All Movements

ID: 929753, Location: 41.983142, -84.663463



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

[N] Water

Total: 92

In: 47 Out: 45

34
7
6

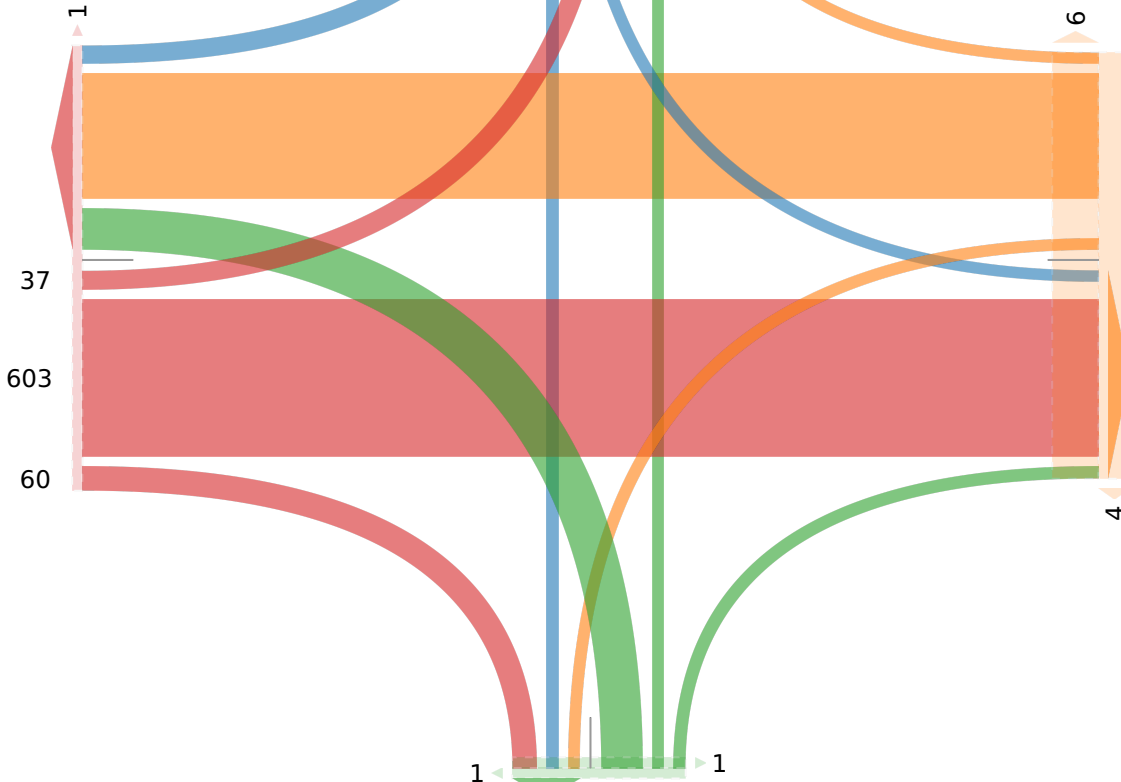


[W] Chicago

Total: 1334

In: 700

Out: 634



37

603

60



130
3
10

Out: 74 In: 143

Total: 217

[S] West

5
470

7

Out: 619 In: 482

Total: 1101

[E] Chicago

Maumee St. - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929754, Location: 41.983919, -84.661596



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

Leg Direction	Maumee Northbound						Evans Southbound						US 12 Eastbound						US 12 Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-17 2:00PM	3	10	11	0	24	0	6	11	29	0	46	1	19	82	18	0	119	0	12	68	5	0	85	0	274
2:15PM	3	9	7	0	19	0	11	23	27	0	61	0	20	77	19	0	116	0	8	81	5	0	94	0	290
2:30PM	4	13	5	0	22	1	6	12	31	0	49	4	39	117	10	0	166	1	11	68	9	0	88	4	325
2:45PM	19	34	9	0	62	0	3	22	24	0	49	7	32	95	24	0	151	0	16	63	8	0	87	7	349
Hourly Total	29	66	32	0	127	1	26	68	111	0	205	12	110	371	71	0	552	1	47	280	27	0	354	11	1238
3:00PM	20	22	20	0	62	0	6	18	28	0	52	0	31	127	23	0	181	0	19	80	8	0	107	1	402
3:15PM	5	14	14	0	33	6	3	17	28	0	48	0	30	104	16	0	150	0	7	84	7	0	98	0	329
3:30PM	10	15	7	0	32	9	8	12	23	0	43	0	36	117	11	0	164	0	5	75	4	0	84	2	323
3:45PM	8	12	16	0	36	1	9	18	52	0	79	0	31	117	5	0	153	0	7	75	4	0	86	9	354
Hourly Total	43	63	57	0	163	16	26	65	131	0	222	0	128	465	55	0	648	0	38	314	23	0	375	12	1408
Total	72	129	89	0	290	17	52	133	242	0	427	12	238	836	126	0	1200	1	85	594	50	0	729	23	2646
% Approach	24.8%	44.5%	30.7%	0%	-	-	12.2%	31.1%	56.7%	0%	-	-	19.8%	69.7%	10.5%	0%	-	-	11.7%	81.5%	6.9%	0%	-	-	-
% Total	2.7%	4.9%	3.4%	0%	11.0%	-	2.0%	5.0%	9.1%	0%	16.1%	-	9.0%	31.6%	4.8%	0%	45.4%	-	3.2%	22.4%	1.9%	0%	27.6%	-	-
Lights	71	123	83	0	277	-	44	131	232	0	407	-	226	776	125	0	1127	-	84	554	42	0	680	-	2491
% Lights	98.6%	95.3%	93.3%	0%	95.5%	-	84.6%	98.5%	95.9%	0%	95.3%	-	95.0%	92.8%	99.2%	0%	93.9%	-	98.8%	93.3%	84.0%	0%	93.3%	-	94.1%
Single-Unit Trucks	1	3	0	0	4	-	0	2	3	0	5	-	3	20	0	0	23	-	1	5	1	0	7	-	39
% Single-Unit Trucks	1.4%	2.3%	0%	0%	1.4%	-	0%	1.5%	1.2%	0%	1.2%	-	1.3%	2.4%	0%	0%	1.9%	-	1.2%	0.8%	2.0%	0%	1.0%	-	1.5%
Articulated Trucks	0	0	0	0	0	-	5	0	6	0	11	-	7	34	0	0	41	-	0	33	6	0	39	-	91
% Articulated Trucks	0%	0%	0%	0%	0%	-	9.6%	0%	2.5%	0%	2.6%	-	2.9%	4.1%	0%	0%	3.4%	-	0%	5.6%	12.0%	0%	5.3%	-	3.4%
Buses	0	3	6	0	9	-	3	0	1	0	4	-	2	6	1	0	9	-	0	2	1	0	3	-	25
% Buses	0%	2.3%	6.7%	0%	3.1%	-	5.8%	0%	0.4%	0%	0.9%	-	0.8%	0.7%	0.8%	0%	0.8%	-	0%	0.3%	2.0%	0%	0.4%	-	0.9%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	17	-	-	-	-	-	12	-	-	-	-	-	1	-	-	-	-	-	22	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	95.7%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	4.3%	

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

Maumee St. - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

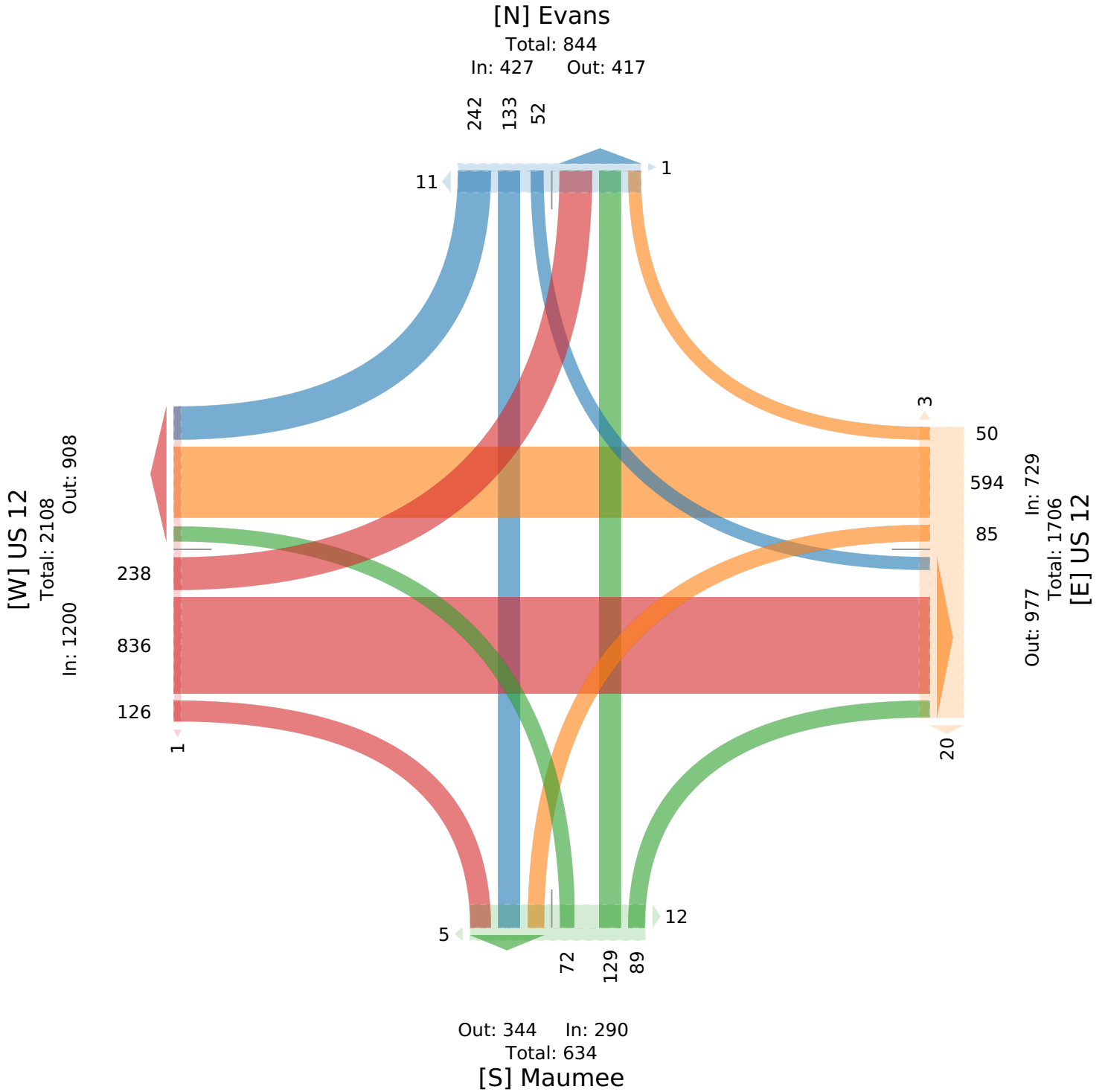
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929754, Location: 41.983919, -84.661596



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



Maumee St. - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

All Movements

ID: 929754, Location: 41.983919, -84.661596



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

Leg Direction	Maumee Northbound						Evans Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 3:00PM	20	22	20	0	62	0	6	18	28	0	52	0	31	127	23	0	181	0	19	80	8	0	107	1	402
3:15PM	5	14	14	0	33	6	3	17	28	0	48	0	30	104	16	0	150	0	7	84	7	0	98	0	329
3:30PM	10	15	7	0	32	9	8	12	23	0	43	0	36	117	11	0	164	0	5	75	4	0	84	2	323
3:45PM	8	12	16	0	36	1	9	18	52	0	79	0	31	117	5	0	153	0	7	75	4	0	86	9	354
Total	43	63	57	0	163	16	26	65	131	0	222	0	128	465	55	0	648	0	38	314	23	0	375	12	1408
% Approach	26.4%	38.7%	35.0%	0%	-	-	11.7%	29.3%	59.0%	0%	-	-	19.8%	71.8%	8.5%	0%	-	-	10.1%	83.7%	6.1%	0%	-	-	-
% Total	3.1%	4.5%	4.0%	0%	11.6%	-	1.8%	4.6%	9.3%	0%	15.8%	-	9.1%	33.0%	3.9%	0%	46.0%	-	2.7%	22.3%	1.6%	0%	26.6%	-	-
PHF	0.538	0.716	0.713	-	0.657	-	0.722	0.903	0.630	-	0.703	-	0.889	0.915	0.598	-	0.895	-	0.500	0.935	0.719	-	0.876	-	0.876
Lights	43	59	51	0	153	-	21	64	126	0	211	-	125	435	54	0	614	-	37	292	21	0	350	-	1328
% Lights	100%	93.7%	89.5%	0%	93.9%	-	80.8%	98.5%	96.2%	0%	95.0%	-	97.7%	93.5%	98.2%	0%	94.8%	-	97.4%	93.0%	91.3%	0%	93.3%	-	94.3%
Single-Unit Trucks	0	1	0	0	1	-	0	1	1	0	2	-	1	11	0	0	12	-	1	3	1	0	5	-	20
% Single-Unit Trucks	0%	1.6%	0%	0%	0.6%	-	0%	1.5%	0.8%	0%	0.9%	-	0.8%	2.4%	0%	0%	1.9%	-	2.6%	1.0%	4.3%	0%	1.3%	-	1.4%
Articulated Trucks	0	0	0	0	0	-	2	0	4	0	6	-	1	13	0	0	14	-	0	17	0	0	17	-	37
% Articulated Trucks	0%	0%	0%	0%	0%	-	7.7%	0%	3.1%	0%	2.7%	-	0.8%	2.8%	0%	0%	2.2%	-	0%	5.4%	0%	0%	4.5%	-	2.6%
Buses	0	3	6	0	9	-	3	0	0	0	3	-	1	6	1	0	8	-	0	2	1	0	3	-	23
% Buses	0%	4.8%	10.5%	0%	5.5%	-	11.5%	0%	0%	0%	1.4%	-	0.8%	1.3%	1.8%	0%	1.2%	-	0%	0.6%	4.3%	0%	0.8%	-	1.6%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	11	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.7%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.3%	-

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

Maumee St. - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

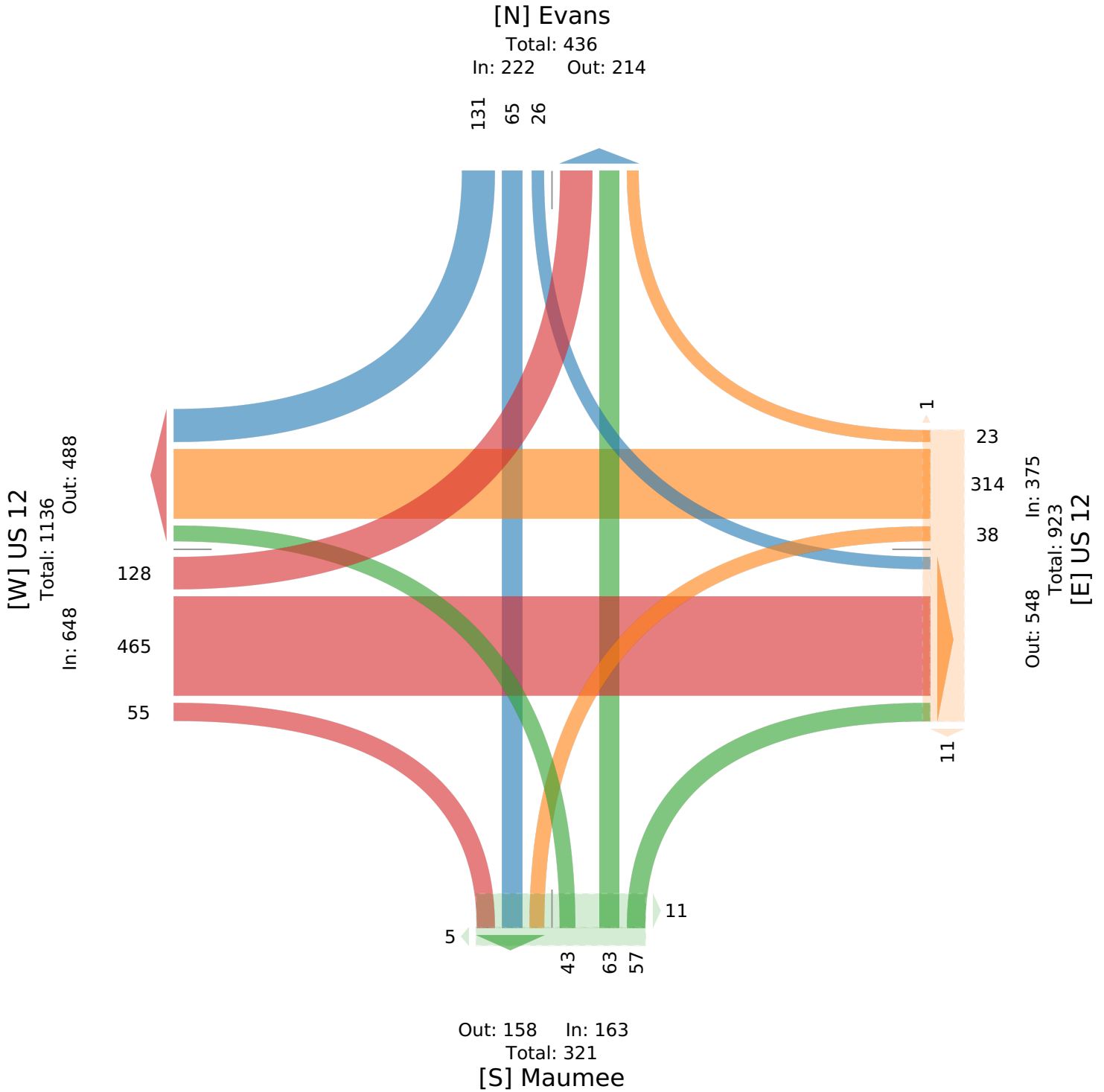
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929754, Location: 41.983919, -84.661596



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



Maumee St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929759, Location: 41.983919, -84.661596



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

Leg Direction	Maumee Northbound						Evans Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:00AM	6	11	6	0	23	0	2	10	17	0	29	0	23	63	10	0	96	0	9	60	6	0	75	1	223
7:15AM	3	13	7	0	23	0	9	35	21	0	65	0	24	79	18	0	121	2	18	84	6	0	108	4	317
7:30AM	8	33	23	0	64	0	7	62	33	0	102	1	24	87	36	0	147	0	36	102	6	0	144	2	457
7:45AM	20	25	21	0	66	0	9	17	41	0	67	0	11	49	13	0	73	0	16	94	5	0	115	2	321
Hourly Total	37	82	57	0	176	0	27	124	112	0	263	1	82	278	77	0	437	2	79	340	23	0	442	9	1318
8:00AM	6	6	6	0	18	0	2	6	23	0	31	11	16	73	4	0	93	0	11	75	3	0	89	0	231
8:15AM	3	5	7	0	15	0	5	13	28	0	46	0	21	59	8	0	88	0	4	63	5	0	72	0	221
8:30AM	3	4	2	0	9	0	4	4	16	0	24	0	11	41	7	0	59	0	8	51	2	0	61	0	153
8:45AM	8	4	4	0	16	0	2	9	33	0	44	18	12	50	11	0	73	0	9	71	7	0	87	0	220
Hourly Total	20	19	19	0	58	0	13	32	100	0	145	29	60	223	30	0	313	0	32	260	17	0	309	0	825
11:00AM	9	4	6	0	19	0	0	7	16	0	23	7	29	67	9	0	105	0	7	70	5	0	82	0	229
11:15AM	5	7	3	0	15	0	6	8	14	0	28	0	15	77	3	0	95	0	4	60	1	0	65	0	203
11:30AM	5	3	9	0	17	1	7	6	18	0	31	8	25	68	7	0	100	0	7	91	3	0	101	0	249
11:45AM	9	6	7	0	22	0	5	4	14	0	23	9	27	65	8	0	100	0	4	64	4	0	72	0	217
Hourly Total	28	20	25	0	73	1	18	25	62	0	105	24	96	277	27	0	400	0	22	285	13	0	320	0	898
12:00PM	7	7	6	0	20	0	7	9	21	0	37	0	25	98	10	0	133	0	9	70	2	0	81	0	271
12:15PM	10	9	5	0	24	0	4	8	24	0	36	0	23	63	14	0	100	0	7	71	5	0	83	1	243
12:30PM	5	7	5	0	17	0	4	7	29	0	40	1	21	83	9	0	113	0	6	75	7	0	88	0	258
12:45PM	8	8	4	0	20	0	3	11	19	0	33	0	26	93	9	0	128	1	9	70	6	0	85	1	266
Hourly Total	30	31	20	0	81	0	18	35	93	0	146	1	95	337	42	0	474	1	31	286	20	0	337	2	1038
4:00PM	7	16	3	0	26	1	14	18	27	0	59	4	47	103	12	0	162	0	11	93	3	0	107	0	354
4:15PM	9	17	12	0	38	5	6	21	35	0	62	2	38	112	11	0	161	1	6	73	6	0	85	2	346
4:30PM	7	11	10	0	28	0	6	25	37	0	68	4	33	97	15	0	145	1	10	84	4	0	98	10	339
4:45PM	4	22	9	0	35	0	4	18	18	0	40	0	35	120	10	0	165	0	7	76	4	0	87	0	327
Hourly Total	27	66	34	0	127	6	30	82	117	0	229	10	153	432	48	0	633	2	34	326	17	0	377	12	1366
5:00PM	7	8	13	0	28	0	9	14	34	0	57	2	38	138	8	0	184	1	8	90	7	0	105	0	374
5:15PM	6	23	18	0	47	0	8	12	25	0	45	1	34	122	9	0	165	1	9	84	4	0	97	0	354
5:30PM	12	17	12	0	41	0	7	9	19	0	35	0	31	104	7	0	142	1	9	79	3	0	91	4	309
5:45PM	14	11	6	0	31	1	5	12	20	0	37	5	30	92	9	0	131	0	5	69	3	0	77	5	276
Hourly Total	39	59	49	0	147	1	29	47	98	0	174	8	133	456	33	0	622	3	31	322	17	0	370	9	1313
Total	181	277	204	0	662	8	135	345	582	0	1062	73	619	2003	257	0	2879	8	229	1819	107	0	2155	32	6758
% Approach	27.3%	41.8%	30.8%	0%	-	-	12.7%	32.5%	54.8%	0%	-	-	21.5%	69.6%	8.9%	0%	-	-	10.6%	84.4%	5.0%	0%	-	-	-
% Total	2.7%	4.1%	3.0%	0%	9.8%	-	2.0%	5.1%	8.6%	0%	15.7%	-	9.2%	29.6%	3.8%	0%	42.6%	-	3.4%	26.9%	1.6%	0%	31.9%	-	-
Lights	176	272	188	0	636	-	123	340	555	0	1018	-	580	1854	256	0	2690	-	228	1681	94	0	2003	-	6347
% Lights	97.2%	98.2%	92.2%	0%	96.1%	-	91.1%	98.6%	95.4%	0%	95.9%	-	93.7%	92.6%	99.6%	0%	93.4%	-	99.6%	92.4%	87.9%	0%	92.9%	-	93.9%
Single-Unit Trucks	3	5	3	0	11	-	4	5	11	0	20	-	14	40	1	0	55	-	1	36	2	0	39	-	125
% Single-Unit Trucks	1.7%	1.8%	1.5%	0%	1.7%	-	3.0%	1.4%	1.9%	0%	1.9%	-	2.3%	2.0%	0.4%	0%	1.9%	-	0.4%	2.0%	1.9%	0%	1.8%	-	1.8%
Articulated Trucks	2	0	0	0	2	-	7	0	13	0	20	-	22	101	0	0	123	-	0	98	11	0	109	-	254
% Articulated Trucks	1.1%	0%	0%	0%	0.3%	-	5.2%	0%	2.2%	0%	1.9%	-	3.6%	5.0%	0%	0%	4.3%	-	0%	5.4%	10.3%	0%	5.1%	-	3.8%
Buses	0	0	13	0	13	-	1	0	3	0	4	-	3	8	0	0	11	-	0	4	0	0	4	-	32
% Buses	0%	0%	6.4%	0%	2.0%	-	0.7%	0%	0.5%	0%	0.4%	-	0.5%	0.4%	0%	0%	0.4%	-	0%	0.2%	0%	0%	0.2%	-	0.5%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	73	-	-	-	-	-	6	-	-	-	-	-	29	
% Pedestrians	-	-	-	-	-	87.5%	-	-	-	-	-	100%	-	-	-	-	-	75.0%	-	-	-	-	-	90.6%	
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	12.5%	-	-	-	-	-	0%	-	-	-	-	-	25.0%	-	-	-	-	-	9.4%	

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

Maumee St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

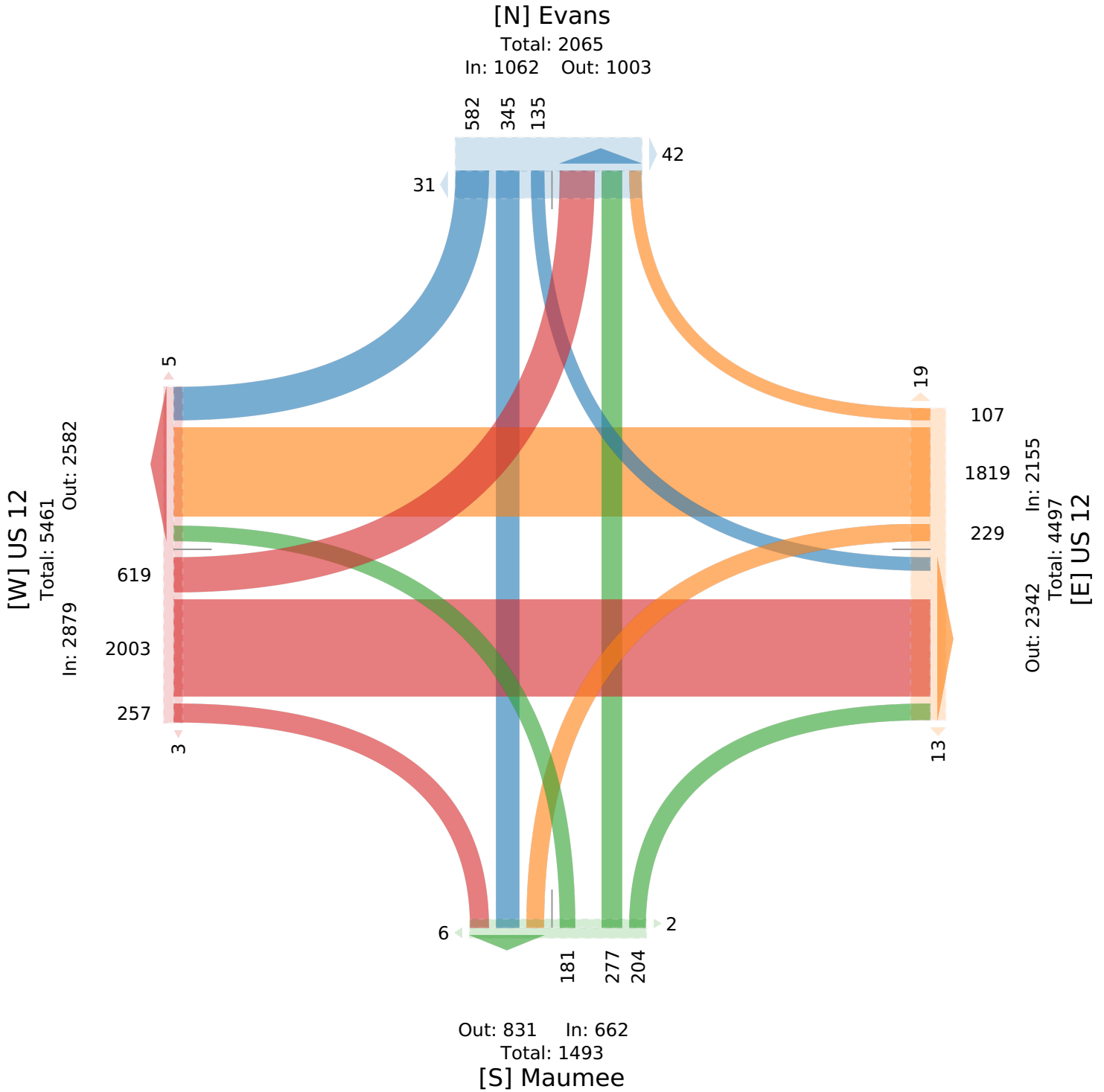
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929759, Location: 41.983919, -84.661596



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



Maumee St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929759, Location: 41.983919, -84.661596



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

Leg Direction	Maumee Northbound						Evans Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:15AM	3	13	7	0	23	0	9	35	21	0	65	0	24	79	18	0	121	2	18	84	6	0	108	4	317
7:30AM	8	33	23	0	64	0	7	62	33	0	102	1	24	87	36	0	147	0	36	102	6	0	144	2	457
7:45AM	20	25	21	0	66	0	9	17	41	0	67	0	11	49	13	0	73	0	16	94	5	0	115	2	321
8:00AM	6	6	6	0	18	0	2	6	23	0	31	11	16	73	4	0	93	0	11	75	3	0	89	0	231
Total	37	77	57	0	171	0	27	120	118	0	265	12	75	288	71	0	434	2	81	355	20	0	456	8	1326
% Approach	21.6%	45.0%	33.3%	0%	-	-	10.2%	45.3%	44.5%	0%	-	-	17.3%	66.4%	16.4%	0%	-	-	17.8%	77.9%	4.4%	0%	-	-	-
% Total	2.8%	5.8%	4.3%	0%	12.9%	-	2.0%	9.0%	8.9%	0%	20.0%	-	5.7%	21.7%	5.4%	0%	32.7%	-	6.1%	26.8%	1.5%	0%	34.4%	-	-
PHF	0.463	0.583	0.620	-	0.648	-	0.750	0.484	0.720	-	0.650	-	0.781	0.828	0.493	-	0.738	-	0.563	0.870	0.833	-	0.792	-	0.725
Lights	36	76	45	0	157	-	25	120	117	0	262	-	68	258	71	0	397	-	81	328	17	0	426	-	1242
% Lights	97.3%	98.7%	78.9%	0%	91.8%	-	92.6%	100%	99.2%	0%	98.9%	-	90.7%	89.6%	100%	0%	91.5%	-	100%	92.4%	85.0%	0%	93.4%	-	93.7%
Single-Unit Trucks	1	1	0	0	2	-	1	0	0	0	1	-	1	10	0	0	11	-	0	9	0	0	9	-	23
% Single-Unit Trucks	2.7%	1.3%	0%	0%	1.2%	-	3.7%	0%	0%	0%	0.4%	-	1.3%	3.5%	0%	0%	2.5%	-	0%	2.5%	0%	0%	2.0%	-	1.7%
Articulated Trucks	0	0	0	0	0	-	0	0	1	0	1	-	6	15	0	0	21	-	0	17	3	0	20	-	42
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0.8%	0%	0.4%	-	8.0%	5.2%	0%	0%	4.8%	-	0%	4.8%	15.0%	0%	4.4%	-	3.2%
Buses	0	0	12	0	12	-	1	0	0	0	1	-	0	5	0	0	5	-	0	1	0	0	1	-	19
% Buses	0%	0%	21.1%	0%	7.0%	-	3.7%	0%	0%	0%	0.4%	-	0%	1.7%	0%	0%	1.2%	-	0%	0.3%	0%	0%	0.2%	-	1.4%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	2	-	-	-	-	-	8	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

Maumee St. - TMC

Thu Mar 17, 2022

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

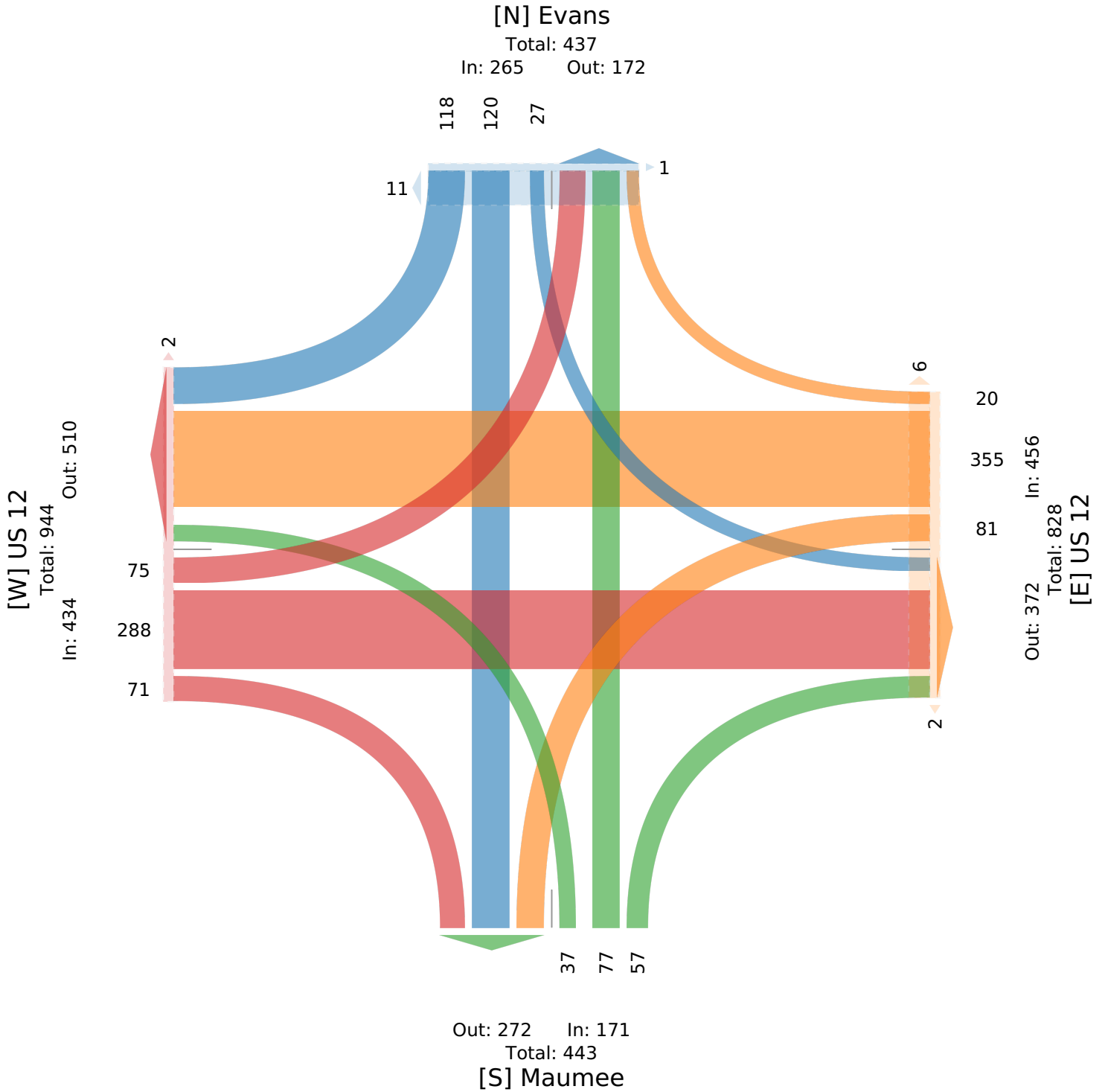
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses,
Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929759, Location: 41.983919, -84.661596



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



Maumee St. - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929759, Location: 41.983919, -84.661596



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

Leg Direction	Maumee Northbound						Evans Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 12:00PM	7	7	6	0	20	0	7	9	21	0	37	0	25	98	10	0	133	0	9	70	2	0	81	0	271
12:15PM	10	9	5	0	24	0	4	8	24	0	36	0	23	63	14	0	100	0	7	71	5	0	83	1	243
12:30PM	5	7	5	0	17	0	4	7	29	0	40	1	21	83	9	0	113	0	6	75	7	0	88	0	258
12:45PM	8	8	4	0	20	0	3	11	19	0	33	0	26	93	9	0	128	1	9	70	6	0	85	1	266
Total	30	31	20	0	81	0	18	35	93	0	146	1	95	337	42	0	474	1	31	286	20	0	337	2	1038
% Approach	37.0%	38.3%	24.7%	0%	-	-	12.3%	24.0%	63.7%	0%	-	-	20.0%	71.1%	8.9%	0%	-	-	9.2%	84.9%	5.9%	0%	-	-	-
% Total	2.9%	3.0%	1.9%	0%	7.8%	-	1.7%	3.4%	9.0%	0%	14.1%	-	9.2%	32.5%	4.0%	0%	45.7%	-	3.0%	27.6%	1.9%	0%	32.5%	-	-
PHF	0.750	0.861	0.833	-	0.844	-	0.643	0.795	0.802	-	0.913	-	0.913	0.860	0.750	-	0.891	-	0.861	0.953	0.714	-	0.957	-	0.958
Lights	30	31	20	0	81	-	17	35	88	0	140	-	83	298	42	0	423	-	30	261	19	0	310	-	954
% Lights	100%	100%	100%	0%	100%	-	94.4%	100%	94.6%	0%	95.9%	-	87.4%	88.4%	100%	0%	89.2%	-	96.8%	91.3%	95.0%	0%	92.0%	-	91.9%
Single-Unit Trucks	0	0	0	0	0	-	0	0	2	0	2	-	6	8	0	0	14	-	1	5	0	0	6	-	22
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	2.2%	0%	1.4%	-	6.3%	2.4%	0%	0%	3.0%	-	3.2%	1.7%	0%	0%	1.8%	-	2.1%
Articulated Trucks	0	0	0	0	0	-	1	0	3	0	4	-	6	31	0	0	37	-	0	20	1	0	21	-	62
% Articulated Trucks	0%	0%	0%	0%	0%	-	5.6%	0%	3.2%	0%	2.7%	-	6.3%	9.2%	0%	0%	7.8%	-	0%	7.0%	5.0%	0%	6.2%	-	6.0%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-	-	-	-	-	-100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

Maumee St. - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929759, Location: 41.983919, -84.661596



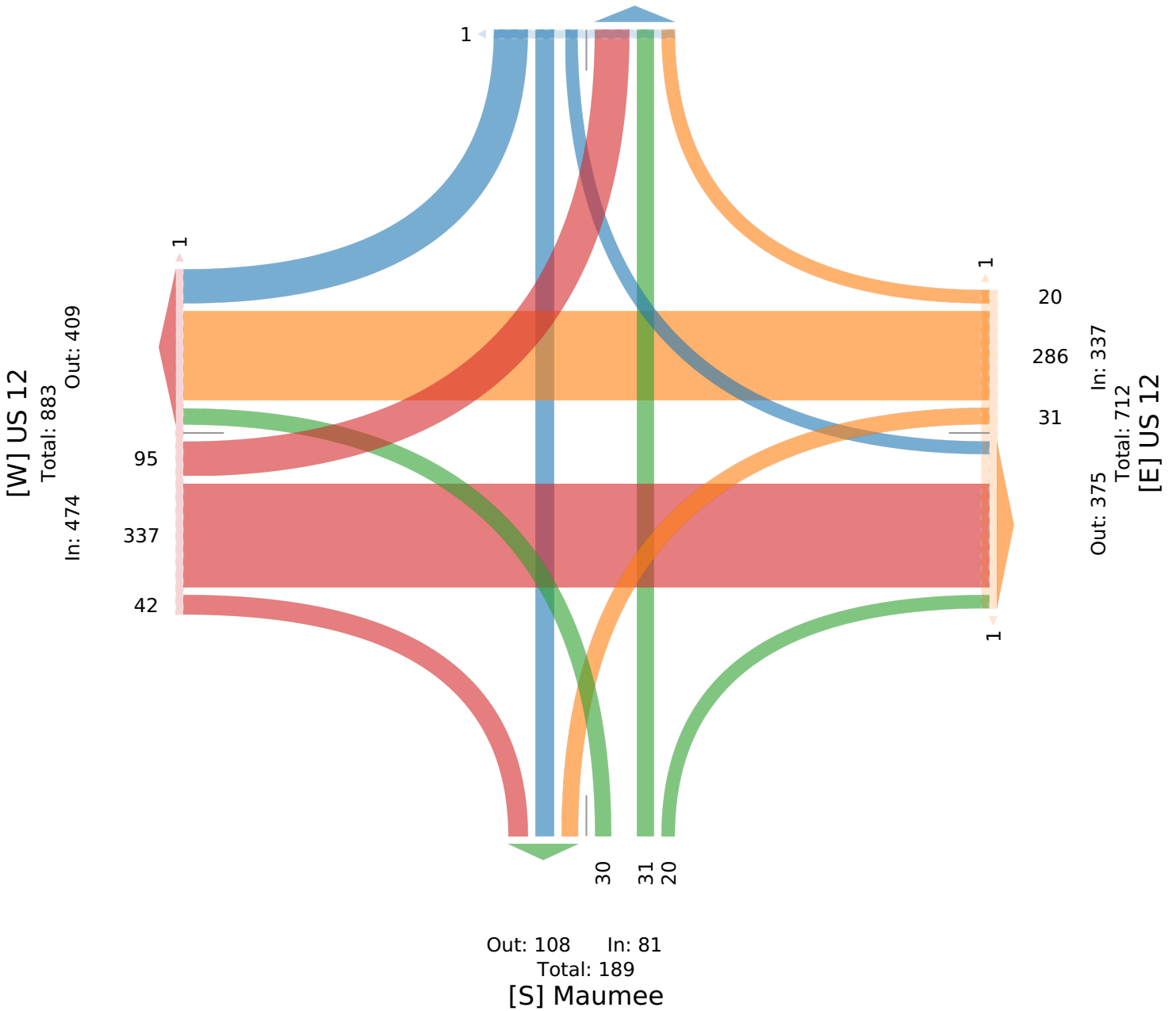
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Evans

Total: 292

In: 146 Out: 146

93 35 18



Maumee St. - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 929759, Location: 41.983919, -84.661596



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

Leg Direction	Maumee Northbound						Evans Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 4:30PM	7	11	10	0	28	0	6	25	37	0	68	4	33	97	15	0	145	1	10	84	4	0	98	10	339
4:45PM	4	22	9	0	35	0	4	18	18	0	40	0	35	120	10	0	165	0	7	76	4	0	87	0	327
5:00PM	7	8	13	0	28	0	9	14	34	0	57	2	38	138	8	0	184	1	8	90	7	0	105	0	374
5:15PM	6	23	18	0	47	0	8	12	25	0	45	1	34	122	9	0	165	1	9	84	4	0	97	0	354
Total	24	64	50	0	138	0	27	69	114	0	210	7	140	477	42	0	659	3	34	334	19	0	387	10	1394
% Approach	17.4%	46.4%	36.2%	0%	-	-	12.9%	32.9%	54.3%	0%	-	-	21.2%	72.4%	6.4%	0%	-	-	8.8%	86.3%	4.9%	0%	-	-	-
% Total	1.7%	4.6%	3.6%	0%	9.9%	-	1.9%	4.9%	8.2%	0%	15.1%	-	10.0%	34.2%	3.0%	0%	47.3%	-	2.4%	24.0%	1.4%	0%	27.8%	-	-
PHF	0.857	0.696	0.694	-	0.734	-	0.750	0.690	0.770	-	0.772	-	0.921	0.864	0.700	-	0.895	-	0.850	0.928	0.679	-	0.921	-	0.932
Lights	23	63	50	0	136	-	24	69	110	0	203	-	135	464	42	0	641	-	34	321	19	0	374	-	1354
% Lights	95.8%	98.4%	100%	0%	98.6%	-	88.9%	100%	96.5%	0%	96.7%	-	96.4%	97.3%	100%	0%	97.3%	-	100%	96.1%	100%	0%	96.6%	-	97.1%
Single-Unit Trucks	0	1	0	0	1	-	0	0	2	0	2	-	1	2	0	0	3	-	0	1	0	0	1	-	7
% Single-Unit Trucks	0%	1.6%	0%	0%	0.7%	-	0%	0%	1.8%	0%	1.0%	-	0.7%	0.4%	0%	0%	0.5%	-	0%	0.3%	0%	0%	0.3%	-	0.5%
Articulated Trucks	1	0	0	0	1	-	3	0	1	0	4	-	4	11	0	0	15	-	0	11	0	0	11	-	31
% Articulated Trucks	4.2%	0%	0%	0%	0.7%	-	11.1%	0%	0.9%	0%	1.9%	-	2.9%	2.3%	0%	0%	2.3%	-	0%	3.3%	0%	0%	2.8%	-	2.2%
Buses	0	0	0	0	0	-	0	0	1	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	2
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0.9%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.1%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	1	-	-	-	-	-	10	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-100%	-	-	-	-	-	-33.3%	-	-	-	-	-	-100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-66.7%	-	-	-	-	-	0%	-

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

Maumee St. - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

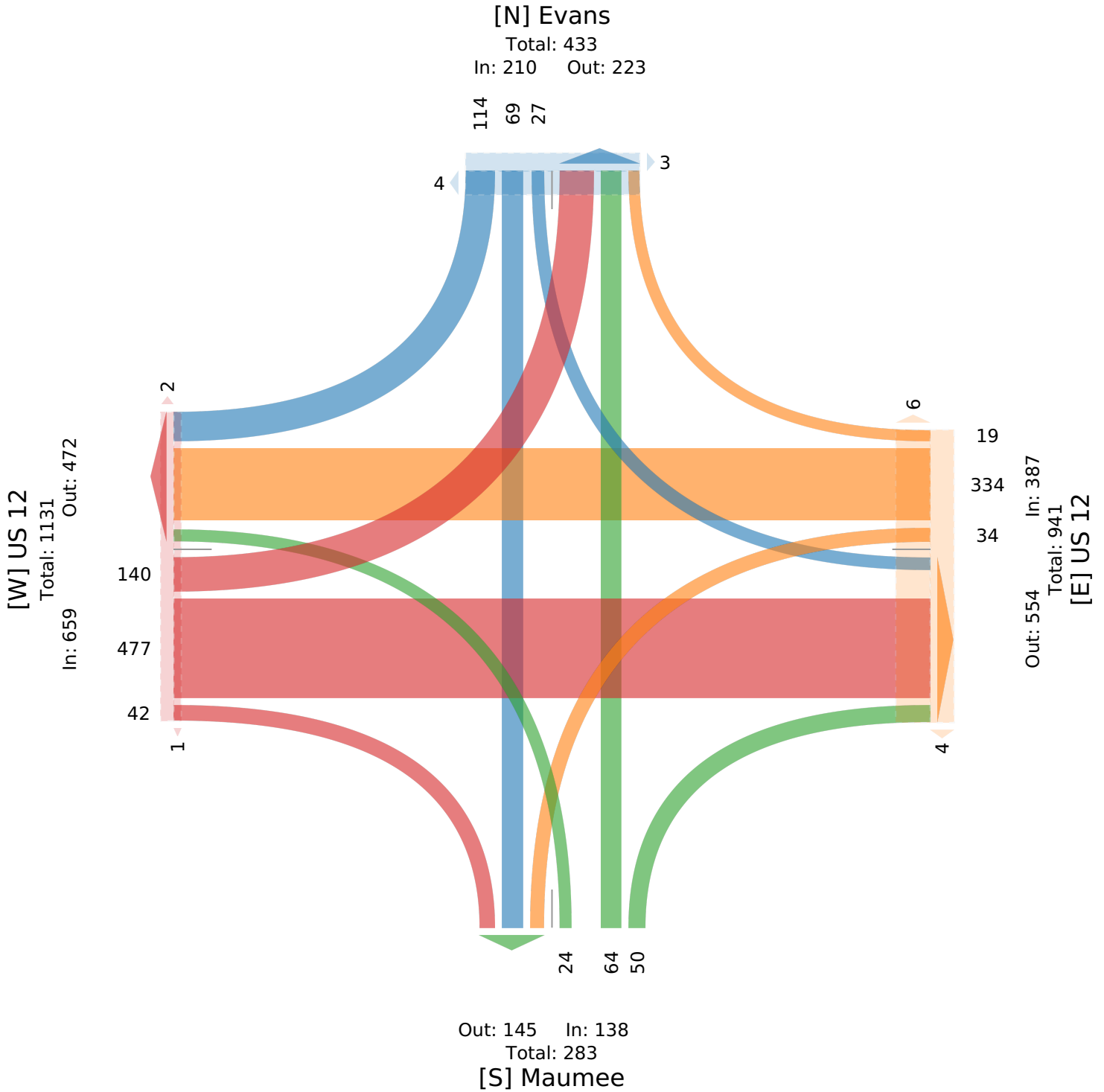
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929759, Location: 41.983919, -84.661596



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



East St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929760, Location: 41.984508, -84.660168



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

Leg Direction	East Northbound						Wright Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:00AM	1	0	6	0	7	0	4	0	6	0	10	0	3	64	3	0	70	0	2	74	1	0	77	0	164
7:15AM	1	0	13	0	14	0	1	3	11	0	15	3	11	68	15	0	94	0	31	92	4	0	127	0	250
7:30AM	1	2	25	0	28	0	1	5	15	0	21	5	16	81	20	0	117	0	34	128	8	0	170	0	336
7:45AM	1	6	16	0	23	0	2	1	4	0	7	0	4	67	8	0	79	0	11	108	5	0	124	0	233
Hourly Total	4	8	60	0	72	0	8	9	36	0	53	8	34	280	46	0	360	0	78	402	18	0	498	0	983
8:00AM	0	0	4	0	4	0	2	0	4	0	6	0	2	75	3	0	80	0	5	86	2	0	93	0	183
8:15AM	1	1	1	0	3	0	0	0	4	0	4	0	3	71	1	0	75	0	4	67	0	0	71	0	153
8:30AM	1	0	2	0	3	0	1	0	3	0	4	0	3	44	1	0	48	0	6	59	1	0	66	0	121
8:45AM	2	0	4	0	6	0	3	2	4	0	9	0	1	53	3	0	57	0	4	82	0	0	86	0	158
Hourly Total	4	1	11	0	16	0	6	2	15	0	23	0	9	243	8	0	260	0	19	294	3	0	316	0	615
11:00AM	2	1	2	0	5	0	2	0	9	0	11	0	5	66	3	0	74	0	4	70	1	0	75	0	165
11:15AM	1	0	5	0	6	0	2	0	5	0	7	0	9	73	2	0	84	0	6	60	2	0	68	0	165
11:30AM	1	1	6	0	8	0	0	1	2	0	3	0	5	76	4	0	85	0	8	100	0	0	108	0	204
11:45AM	1	2	4	0	7	0	2	3	8	0	13	0	6	67	2	0	75	0	3	64	2	0	69	1	164
Hourly Total	5	4	17	0	26	0	6	4	24	0	34	0	25	282	11	0	318	0	21	294	5	0	320	1	698
12:00PM	0	0	3	0	3	0	4	2	3	0	9	0	11	101	5	0	117	0	3	83	2	0	88	1	217
12:15PM	1	1	6	0	8	0	2	3	11	0	16	0	4	67	1	0	72	0	5	66	2	0	73	0	169
12:30PM	3	1	5	0	9	0	1	1	6	0	8	0	6	80	3	0	89	0	6	78	2	0	86	0	192
12:45PM	1	2	2	0	5	0	3	0	6	0	9	0	8	86	4	0	98	0	2	80	0	0	82	0	194
Hourly Total	5	4	16	0	25	0	10	6	26	0	42	0	29	334	13	0	376	0	16	307	6	0	329	1	772
4:00PM	1	1	7	0	9	0	2	1	9	0	12	0	4	117	1	0	122	0	10	95	2	0	107	0	250
4:15PM	2	2	11	0	15	1	1	2	4	0	7	0	8	113	10	0	131	0	7	79	2	0	88	2	241
4:30PM	3	3	11	0	17	0	1	2	7	0	10	3	5	107	5	0	117	1	6	91	5	0	102	2	246
4:45PM	1	5	7	0	13	0	4	4	7	0	15	1	13	115	7	0	135	0	7	78	5	0	90	0	253
Hourly Total	7	11	36	0	54	1	8	9	27	0	44	4	30	452	23	0	505	1	30	343	14	0	387	4	990
5:00PM	2	3	13	0	18	0	2	3	9	0	14	1	16	142	5	0	163	3	10	97	7	0	114	0	309
5:15PM	0	2	5	0	7	0	3	8	13	0	24	0	14	124	8	0	146	0	10	83	0	0	93	0	270
5:30PM	0	2	5	0	7	2	1	5	11	0	17	0	10	106	8	0	124	0	4	81	5	0	90	2	238
5:45PM	0	0	3	0	3	0	3	1	8	0	12	0	9	88	4	0	101	0	4	70	1	0	75	1	191
Hourly Total	2	7	26	0	35	2	9	17	41	0	67	1	49	460	25	0	534	3	28	331	13	0	372	3	1008
Total	27	35	166	0	228	3	47	47	169	0	263	13	176	2051	126	0	2353	4	192	1971	59	0	2222	9	5066
% Approach	11.8%	15.4%	72.8%	0%	-	-	17.9%	17.9%	64.3%	0%	-	-	7.5%	87.2%	5.4%	0%	-	-	8.6%	88.7%	2.7%	0%	-	-	-
% Total	0.5%	0.7%	3.3%	0%	4.5%	-	0.9%	0.9%	3.3%	0%	5.2%	-	3.5%	40.5%	2.5%	0%	46.4%	-	3.8%	38.9%	1.2%	0%	43.9%	-	-
Lights	27	35	166	0	228	-	45	47	169	0	261	-	174	1875	125	0	2174	-	177	1818	59	0	2054	-	4717
% Lights	100%	100%	100%	0%	100%	-	95.7%	100%	100%	0%	99.2%	-	98.9%	91.4%	99.2%	0%	92.4%	-	92.2%	92.2%	100%	0%	92.4%	-	93.1%
Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	2	44	0	0	46	-	1	40	0	0	41	-	87
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	1.1%	2.1%	0%	0%	2.0%	-	0.5%	2.0%	0%	0%	1.8%	-	1.7%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	110	1	0	111	-	0	109	0	0	109	-	220
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	5.4%	0.8%	0%	4.7%	-	0%	5.5%	0%	0%	4.9%	-	4.3%
Buses	0	0	0	0	0	-	2	0	0	0	2	-	0	22	0	0	22	-	14	4	0	0	18	-	42
% Buses	0%	0%	0%	0%	0%	-	4.3%	0%	0%	0%	0.8%	-	0%	1.1%	0%	0%	0.9%	-	7.3%	0.2%	0%	0%	0.8%	-	0.8%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	13	-	-	-	-	-	4	-	-	-	-	-	9	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

East St. - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929760, Location: 41.984508, -84.660168

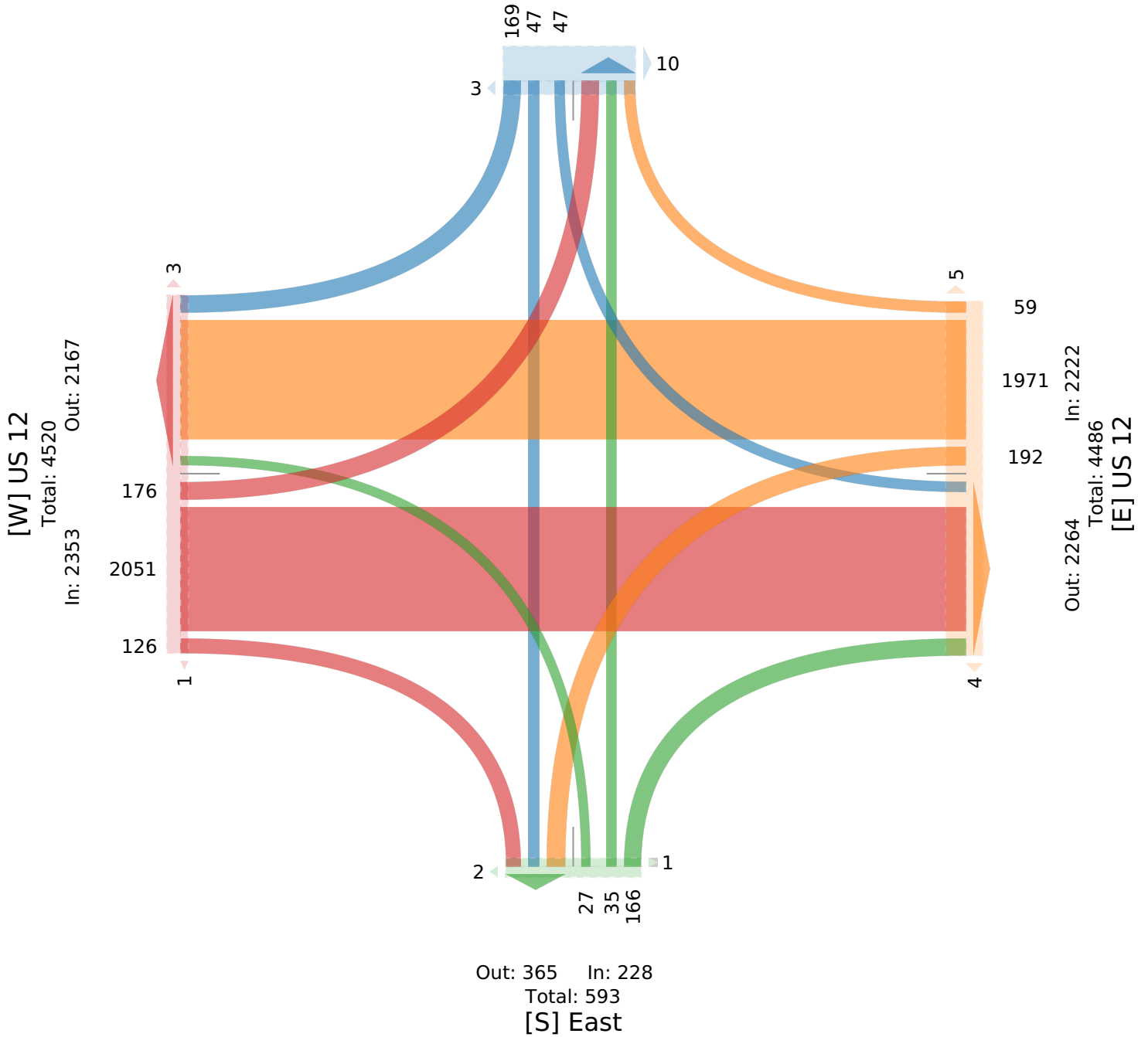


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Wright

Total: 533

In: 263 Out: 270



East St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929760, Location: 41.984508, -84.660168



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

Leg Direction	East Northbound						Wright Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 7:15AM	1	0	13	0	14	0	1	3	11	0	15	3	11	68	15	0	94	0	31	92	4	0	127	0	250
7:30AM	1	2	25	0	28	0	1	5	15	0	21	5	16	81	20	0	117	0	34	128	8	0	170	0	336
7:45AM	1	6	16	0	23	0	2	1	4	0	7	0	4	67	8	0	79	0	11	108	5	0	124	0	233
8:00AM	0	0	4	0	4	0	2	0	4	0	6	0	2	75	3	0	80	0	5	86	2	0	93	0	183
Total	3	8	58	0	69	0	6	9	34	0	49	8	33	291	46	0	370	0	81	414	19	0	514	0	1002
% Approach	4.3%	11.6%	84.1%	0%	-	-	12.2%	18.4%	69.4%	0%	-	-	8.9%	78.6%	12.4%	0%	-	-	15.8%	80.5%	3.7%	0%	-	-	-
% Total	0.3%	0.8%	5.8%	0%	6.9%	-	0.6%	0.9%	3.4%	0%	4.9%	-	3.3%	29.0%	4.6%	0%	36.9%	-	8.1%	41.3%	1.9%	0%	51.3%	-	-
PHF	0.750	0.333	0.580	-	0.616	-	0.750	0.450	0.567	-	0.583	-	0.516	0.898	0.575	-	0.791	-	0.596	0.809	0.594	-	0.756	-	0.746
Lights	3	8	58	0	69	-	6	9	34	0	49	-	33	247	46	0	326	-	68	384	19	0	471	-	915
% Lights	100%	100%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	84.9%	100%	0%	88.1%	-	84.0%	92.8%	100%	0%	91.6%	-	91.3%
Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	12	0	0	12	-	0	9	0	0	9	-	21
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	4.1%	0%	0%	3.2%	-	0%	2.2%	0%	0%	1.8%	-	2.1%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	14	0	0	14	-	0	20	0	0	20	-	34
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	4.8%	0%	0%	3.8%	-	0%	4.8%	0%	0%	3.9%	-	3.4%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	18	0	0	18	-	13	1	0	0	14	-	32
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	6.2%	0%	0%	4.9%	-	16.0%	0.2%	0%	0%	2.7%	-	3.2%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-

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

East St. - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929760, Location: 41.984508, -84.660168



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

[N] Wright

Total: 109

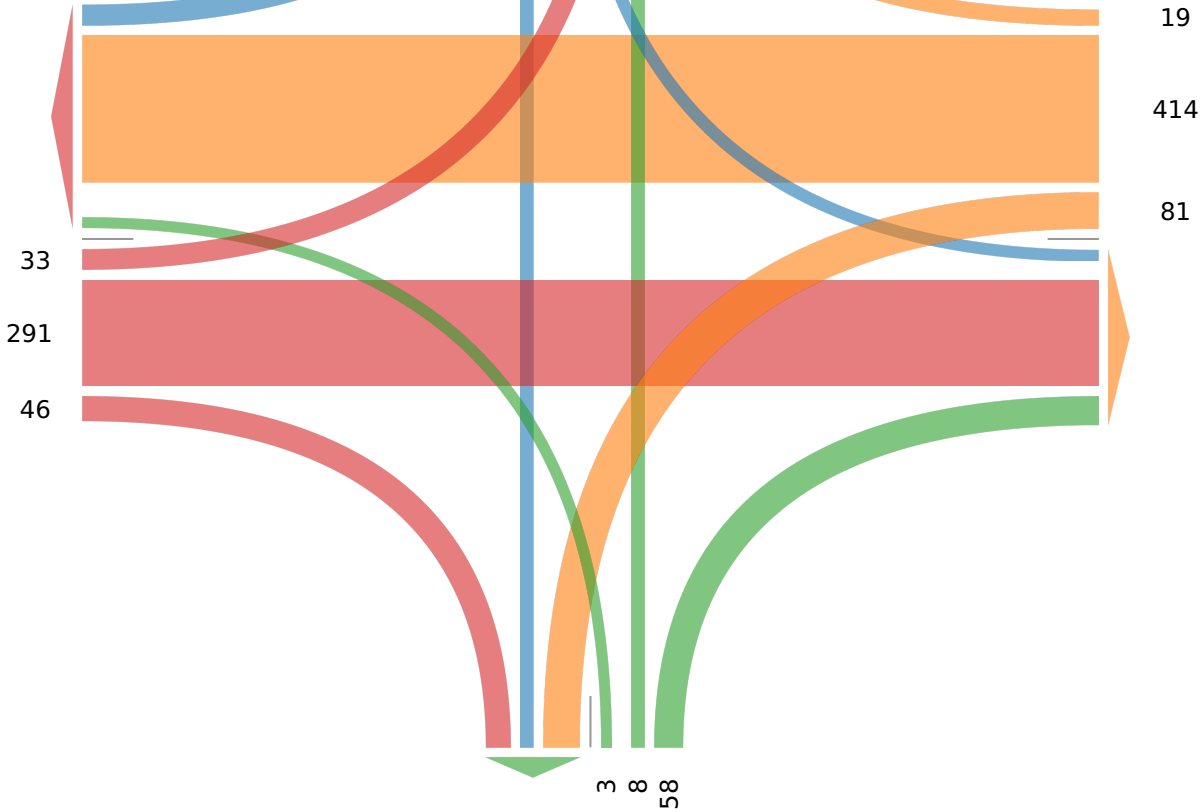
In: 49 Out: 60



[W] US 12

Total: 821

In: 370 Out: 451



Out: 136 In: 69

Total: 205

[S] East

East St. - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929760, Location: 41.984508, -84.660168



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

Leg Direction	East Northbound						Wright Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 12:00PM	0	0	3	0	3	0	4	2	3	0	9	0	11	101	5	0	117	0	3	83	2	0	88	1	217
12:15PM	1	1	6	0	8	0	2	3	11	0	16	0	4	67	1	0	72	0	5	66	2	0	73	0	169
12:30PM	3	1	5	0	9	0	1	1	6	0	8	0	6	80	3	0	89	0	6	78	2	0	86	0	192
12:45PM	1	2	2	0	5	0	3	0	6	0	9	0	8	86	4	0	98	0	2	80	0	0	82	0	194
Total	5	4	16	0	25	0	10	6	26	0	42	0	29	334	13	0	376	0	16	307	6	0	329	1	772
% Approach	20.0%	16.0%	64.0%	0%	-	-	23.8%	14.3%	61.9%	0%	-	-	7.7%	88.8%	3.5%	0%	-	-	4.9%	93.3%	1.8%	0%	-	-	-
% Total	0.6%	0.5%	2.1%	0%	3.2%	-	1.3%	0.8%	3.4%	0%	5.4%	-	3.8%	43.3%	1.7%	0%	48.7%	-	2.1%	39.8%	0.8%	0%	42.6%	-	-
PHF	0.417	0.500	0.667	-	0.694	-	0.625	0.500	0.591	-	0.656	-	0.659	0.827	0.650	-	0.803	-	0.667	0.925	0.750	-	0.935	-	0.889
Lights	5	4	16	0	25	-	10	6	26	0	42	-	29	294	13	0	336	-	16	278	6	0	300	-	703
% Lights	100%	100%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	88.0%	100%	0%	89.4%	-	100%	90.6%	100%	0%	91.2%	-	91.1%
Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	8	0	0	8	-	0	8	0	0	8	-	16
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	2.4%	0%	0%	2.1%	-	0%	2.6%	0%	0%	2.4%	-	2.1%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	32	0	0	32	-	0	21	0	0	21	-	53
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	9.6%	0%	0%	8.5%	-	0%	6.8%	0%	0%	6.4%	-	6.9%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-

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

East St. - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929760, Location: 41.984508, -84.660168



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

[N] Wright

Total: 81

In: 42 Out: 39

26
6
10

[W] US 12
Total: 714
In: 376 Out: 338

29
334
13

6
307
16
Total: 689
[E] US 12
In: 329
Out: 360

Out: 35 In: 25
Total: 60
[S] East

5
4
16

1

East St. - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 929760, Location: 41.984508, -84.660168



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

Leg Direction	East Northbound					Wright Southbound					US 12 Eastbound					US 12 Westbound					Int				
	L	T	R	U	App Ped*	L	T	R	U	App Ped*	L	T	R	U	App Ped*	L	T	R	U	App Ped*					
2022-03-17 4:30PM	3	3	11	0	17	0	1	2	7	0	10	3	5	107	5	0	117	1	6	91	5	0	102	2	246
4:45PM	1	5	7	0	13	0	4	4	7	0	15	1	13	115	7	0	135	0	7	78	5	0	90	0	253
5:00PM	2	3	13	0	18	0	2	3	9	0	14	1	16	142	5	0	163	3	10	97	7	0	114	0	309
5:15PM	0	2	5	0	7	0	3	8	13	0	24	0	14	124	8	0	146	0	10	83	0	0	93	0	270
Total	6	13	36	0	55	0	10	17	36	0	63	5	48	488	25	0	561	4	33	349	17	0	399	2	1078
% Approach	10.9%	23.6%	65.5%	0%	-	-	15.9%	27.0%	57.1%	0%	-	-	8.6%	87.0%	4.5%	0%	-	-	8.3%	87.5%	4.3%	0%	-	-	-
% Total	0.6%	1.2%	3.3%	0%	5.1%	-	0.9%	1.6%	3.3%	0%	5.8%	-	4.5%	45.3%	2.3%	0%	52.0%	-	3.1%	32.4%	1.6%	0%	37.0%	-	-
PHF	0.500	0.650	0.692	-	0.764	-	0.625	0.531	0.692	-	0.656	-	0.750	0.859	0.781	-	0.860	-	0.825	0.899	0.607	-	0.875	-	0.872
Lights	6	13	36	0	55	-	10	17	36	0	63	-	48	471	25	0	544	-	33	335	17	0	385	-	1047
% Lights	100%	100%	100%	0%	100%	-	100%	100%	100%	0%	100%	-	100%	96.5%	100%	0%	97.0%	-	100%	96.0%	100%	0%	96.5%	-	97.1%
Single-Unit Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	2	0	0	2	-	0	1	0	0	1	-	3
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0%	0.3%	0%	0%	0.3%	-	0.3%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	15	0	0	15	-	0	12	0	0	12	-	27
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	3.1%	0%	0%	2.7%	-	0%	3.4%	0%	0%	3.0%	-	2.5%
Buses	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Buses	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.1%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	5	-	-	-	-	-	4	-	-	-	-	-	2	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

East St. - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

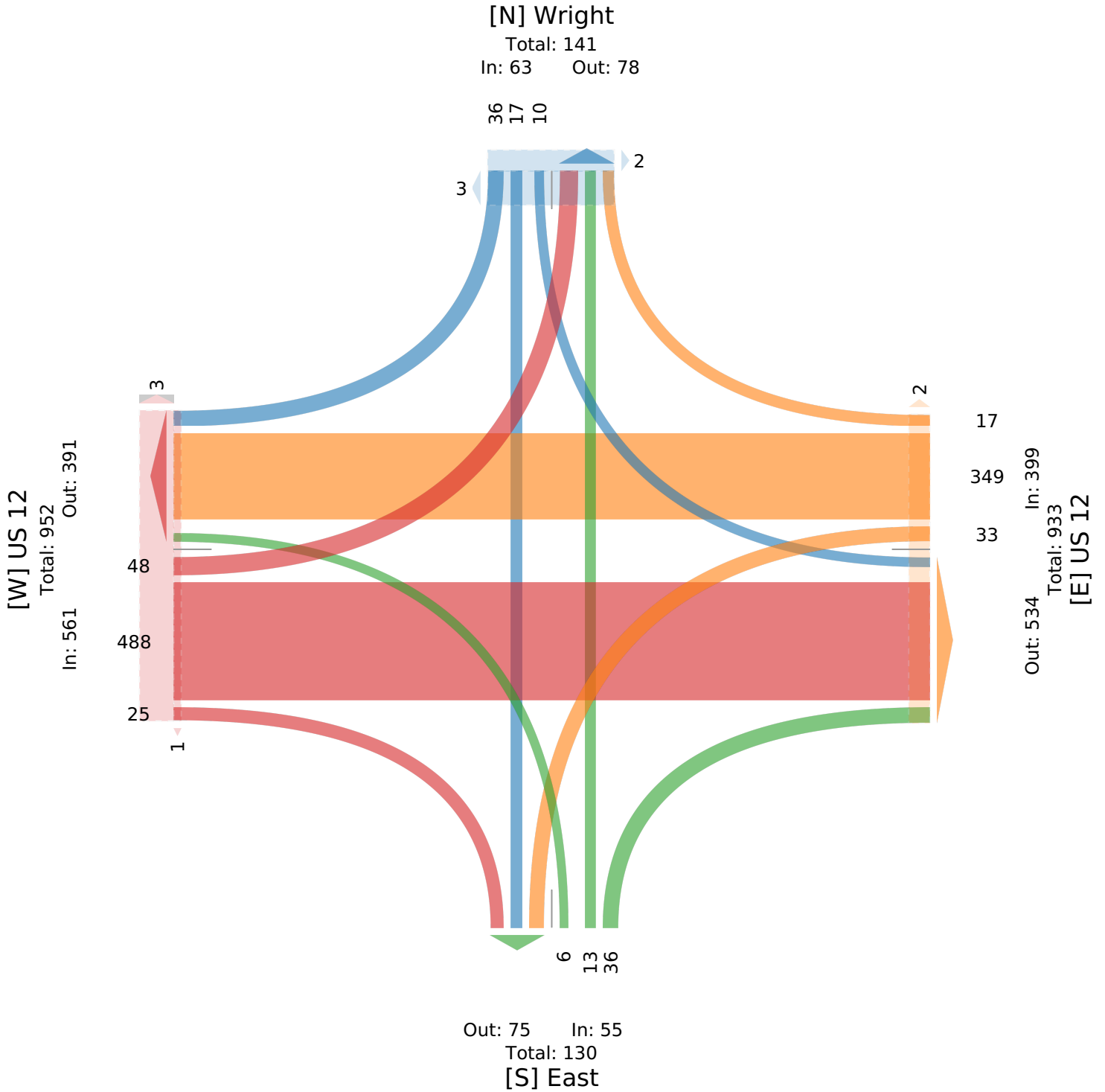
All Classes (Lights, Single-Unit Trucks, Articulated Trucks, Buses, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)

All Movements

ID: 929760, Location: 41.984508, -84.660168



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



Wright St. - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929755, Location: 41.984524, -84.660185



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

Leg Direction	East Northbound						Wright Southbound						US 12 Eastbound						US 12 Westbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
2022-03-17 2:00PM	0	1	0	0	1	0	1	0	6	0	7	2	1	90	4	0	95	0	5	80	4	0	89	0	192
2:15PM	3	1	3	0	7	0	4	1	4	0	9	0	4	85	4	0	93	0	8	87	0	0	95	1	204
2:30PM	2	0	5	0	7	0	0	1	5	0	6	21	8	114	5	0	127	0	19	87	3	0	109	0	249
2:45PM	8	8	18	0	34	0	4	6	12	0	22	3	14	89	8	0	111	0	20	59	3	0	82	0	249
Hourly Total	13	10	26	0	49	0	9	8	27	0	44	26	27	378	21	0	426	0	52	313	10	0	375	1	894
3:00PM	5	7	18	0	30	0	0	0	13	0	13	2	17	127	5	0	149	0	9	95	6	0	110	0	302
3:15PM	2	0	6	0	8	0	3	1	9	0	13	1	8	100	10	0	118	1	6	82	2	0	90	0	229
3:30PM	2	2	8	0	12	6	0	1	7	0	8	2	10	108	5	0	123	0	8	78	0	0	86	0	229
3:45PM	1	3	10	0	14	0	2	0	6	0	8	6	9	126	5	0	140	0	3	79	5	0	87	1	249
Hourly Total	10	12	42	0	64	6	5	2	35	0	42	11	44	461	25	0	530	1	26	334	13	0	373	1	1009
Total	23	22	68	0	113	6	14	10	62	0	86	37	71	839	46	0	956	1	78	647	23	0	748	2	1903
% Approach	20.4%	19.5%	60.2%	0%	-	-	16.3%	11.6%	72.1%	0%	-	-	7.4%	87.8%	4.8%	0%	-	-	10.4%	86.5%	3.1%	0%	-	-	-
% Total	1.2%	1.2%	3.6%	0%	5.9%	-	0.7%	0.5%	3.3%	0%	4.5%	-	3.7%	44.1%	2.4%	0%	50.2%	-	4.1%	34.0%	1.2%	0%	39.3%	-	-
Lights	23	22	65	0	110	-	13	10	61	0	84	-	70	770	46	0	886	-	65	599	23	0	687	-	1767
% Lights	100%	100%	95.6%	0%	97.3%	-	92.9%	100%	98.4%	0%	97.7%	-	98.6%	91.8%	100%	0%	92.7%	-	83.3%	92.6%	100%	0%	91.8%	-	92.9%
Single-Unit Trucks	0	0	0	0	0	-	0	0	1	0	1	-	0	18	0	0	18	-	0	6	0	0	6	-	25
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	1.6%	0%	1.2%	-	0%	2.1%	0%	0%	1.9%	-	0%	0.9%	0%	0%	0.8%	-	1.3%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	37	0	0	37	-	0	39	0	0	39	-	76
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	4.4%	0%	0%	3.9%	-	0%	6.0%	0%	0%	5.2%	-	4.0%
Buses	0	0	3	0	3	-	1	0	0	0	1	-	1	14	0	0	15	-	13	3	0	0	16	-	35
% Buses	0%	0%	4.4%	0%	2.7%	-	7.1%	0%	0%	0%	1.2%	-	1.4%	1.7%	0%	0%	1.6%	-	16.7%	0.5%	0%	0%	2.1%	-	1.8%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	6	-	-	-	-	-	36	-	-	-	-	-	1	-	-	-	-	-	2	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	97.3%	-	-	-	-	-	100%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	2.7%	-	-	-	-	-	0%	-	-	-	-	-	0%	

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

Wright St. - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929755, Location: 41.984524, -84.660185



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

[N] Wright

Total: 202

In: 86 Out: 116

62 10 14

34 3

[W] US 12
Total: 1688
In: 956 Out: 732

71

839

46

1

23

647

78

In: 748
Out: 921

Total: 1669
[E] US 12

2

23 22 68

6

Out: 134 In: 113

Total: 247

[S] East

Wright St. - TMC

Thu Mar 17, 2022

PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

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

All Movements

ID: 929755, Location: 41.984524, -84.660185



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

Leg Direction	East Northbound						Wright Southbound						US 12 Eastbound						US 12 Westbound						Int
	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	
2022-03-17 2:30PM	2	0	5	0	7	0	0	1	5	0	6	21	8	114	5	0	127	0	19	87	3	0	109	0	249
2:45PM	8	8	18	0	34	0	4	6	12	0	22	3	14	89	8	0	111	0	20	59	3	0	82	0	249
3:00PM	5	7	18	0	30	0	0	0	13	0	13	2	17	127	5	0	149	0	9	95	6	0	110	0	302
3:15PM	2	0	6	0	8	0	3	1	9	0	13	1	8	100	10	0	118	1	6	82	2	0	90	0	229
Total	17	15	47	0	79	0	7	8	39	0	54	27	47	430	28	0	505	1	54	323	14	0	391	0	1029
% Approach	21.5%	19.0%	59.5%	0%	-	-	13.0%	14.8%	72.2%	0%	-	-	9.3%	85.1%	5.5%	0%	-	-	13.8%	82.6%	3.6%	0%	-	-	-
% Total	1.7%	1.5%	4.6%	0%	7.7%	-	0.7%	0.8%	3.8%	0%	5.2%	-	4.6%	41.8%	2.7%	0%	49.1%	-	5.2%	31.4%	1.4%	0%	38.0%	-	-
PHF	0.531	0.469	0.653	-	0.581	-	0.438	0.333	0.750	-	0.614	-	0.691	0.846	0.700	-	0.847	-	0.675	0.850	0.583	-	0.889	-	0.852
Lights	17	15	46	0	78	-	7	8	38	0	53	-	46	386	28	0	460	-	41	300	14	0	355	-	946
% Lights	100%	100%	97.9%	0%	98.7%	-	100%	100%	97.4%	0%	98.1%	-	97.9%	89.8%	100%	0%	91.1%	-	75.9%	92.9%	100%	0%	90.8%	-	91.9%
Single-Unit Trucks	0	0	0	0	0	-	0	0	1	0	1	-	0	15	0	0	15	-	0	2	0	0	2	-	18
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0%	2.6%	0%	1.9%	-	0%	3.5%	0%	0%	3.0%	-	0%	0.6%	0%	0%	0.5%	-	1.7%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	22	0	0	22	-	0	18	0	0	18	-	40
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	5.1%	0%	0%	4.4%	-	0%	5.6%	0%	0%	4.6%	-	3.9%
Buses	0	0	1	0	1	-	0	0	0	0	0	-	1	7	0	0	8	-	13	3	0	0	16	-	25
% Buses	0%	0%	2.1%	0%	1.3%	-	0%	0%	0%	0%	0%	-	2.1%	1.6%	0%	0%	1.6%	-	24.1%	0.9%	0%	0%	4.1%	-	2.4%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	26	-	-	-	-	-	1	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	96.3%	-	-	-	-	-	100%	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	3.7%	-	-	-	-	-	0%	-	-	-	-	-	-	-

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

Wright St. - TMC

Thu Mar 17, 2022

PM Peak (2:30 PM - 3:30 PM) - Overall Peak Hour

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

All Movements

ID: 929755, Location: 41.984524, -84.660185



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

[N] Wright

Total: 130

In: 54 Out: 76

39 8 7

24 3

[W] US 12

Total: 884

Out: 379

In: 505

47

430

28

1

14

323

54

Out: 484

In: 391

Total: 875

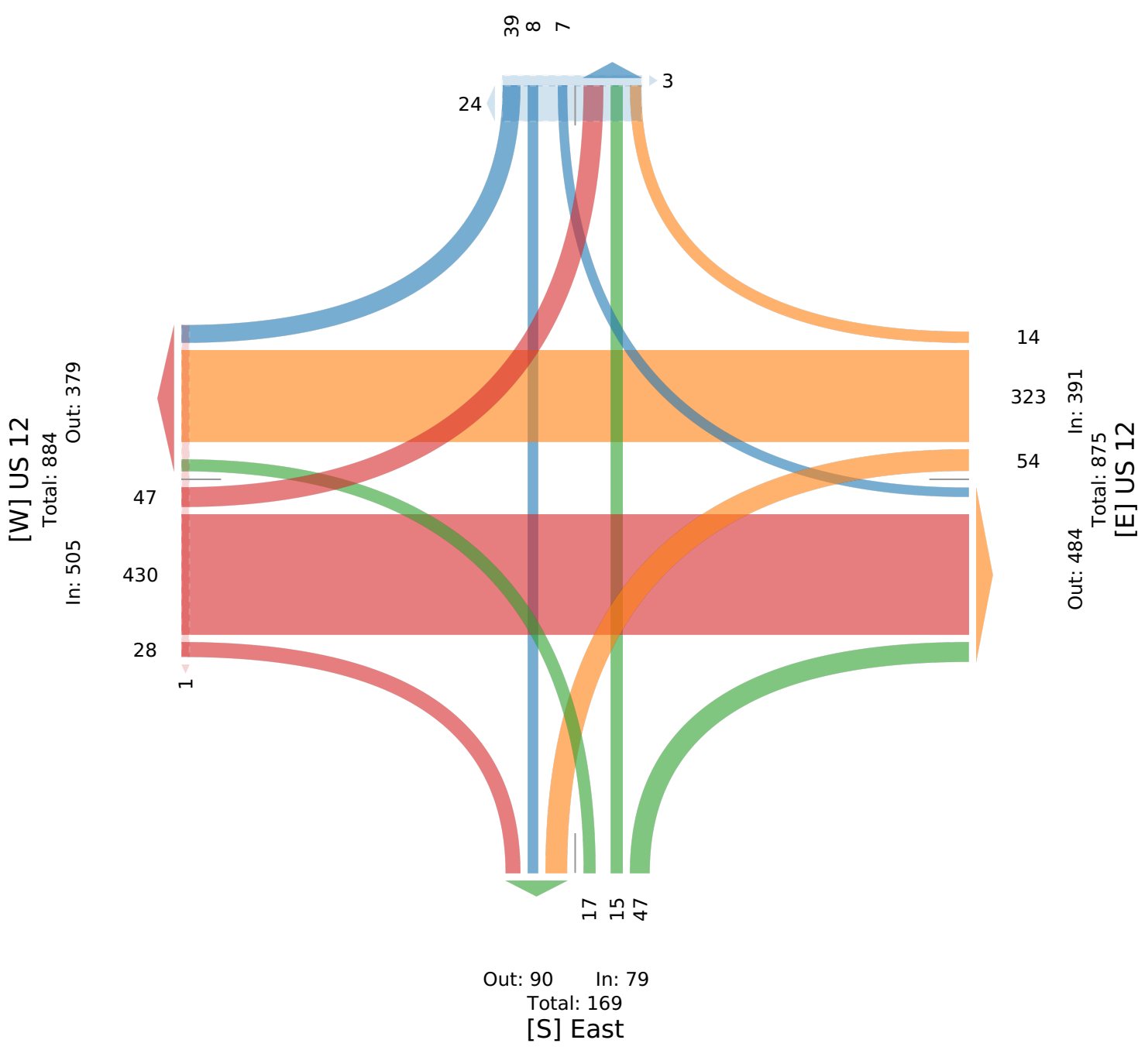
[E] US 12

Out: 90 In: 79

Total: 169

[S] East

17 15 47



Middle School Drive - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929761, Location: 41.985238, -84.658485



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

Leg Direction	Access Southbound					US 12 Eastbound					US 12 Westbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
2022-03-17 7:00AM	0	0	0	0	0	6	68	0	74	0	77	0	0	77	0	151
7:15AM	0	14	0	14	0	4	76	1	81	0	115	2	0	117	0	212
7:30AM	0	8	0	8	0	9	93	3	105	0	157	2	0	159	0	272
7:45AM	1	0	0	1	0	2	81	1	84	0	119	0	0	119	0	204
Hourly Total	1	22	0	23	0	21	318	5	344	0	468	4	0	472	0	839
8:00AM	0	1	0	1	0	1	79	0	80	0	92	1	0	93	0	174
8:15AM	0	2	0	2	0	1	72	0	73	0	69	0	0	69	0	144
8:30AM	0	1	0	1	0	1	46	0	47	0	67	0	0	67	0	115
8:45AM	0	0	0	0	50	0	60	0	60	0	84	0	0	84	0	144
Hourly Total	0	4	0	4	50	3	257	0	260	0	312	1	0	313	0	577
11:00AM	0	1	0	1	0	1	70	0	71	0	73	0	0	73	0	145
11:15AM	0	0	0	0	0	0	80	0	80	0	69	0	0	69	0	149
11:30AM	0	1	0	1	0	1	80	0	81	0	107	0	0	107	0	189
11:45AM	0	0	0	0	1	0	74	0	74	0	74	0	0	74	0	148
Hourly Total	0	2	0	2	1	2	304	0	306	0	323	0	0	323	0	631
12:00PM	0	1	0	1	1	0	108	0	108	0	86	0	0	86	0	195
12:15PM	0	2	0	2	0	1	74	0	75	0	72	1	0	73	0	150
12:30PM	0	0	0	0	0	0	86	0	86	0	85	0	0	85	0	171
12:45PM	0	1	0	1	0	1	93	0	94	0	82	0	0	82	0	177
Hourly Total	0	4	0	4	1	2	361	0	363	0	325	1	0	326	0	693
4:00PM	0	1	0	1	0	0	125	0	125	0	105	0	0	105	0	231
4:15PM	1	0	0	1	1	0	127	0	127	0	88	0	0	88	0	216
4:30PM	0	0	0	0	2	0	115	0	115	0	103	0	0	103	0	218
4:45PM	0	1	0	1	1	0	132	0	132	0	93	1	0	94	0	227
Hourly Total	1	2	0	3	4	0	499	0	499	0	389	1	0	390	0	892
5:00PM	0	2	0	2	2	2	153	0	155	0	111	1	0	112	0	269
5:15PM	1	0	0	1	0	0	129	0	129	0	95	0	0	95	0	225
5:30PM	0	0	0	0	0	0	116	0	116	0	88	0	0	88	0	204
5:45PM	0	0	0	0	0	0	90	0	90	0	75	0	0	75	0	165
Hourly Total	1	2	0	3	2	2	488	0	490	0	369	1	0	370	0	863
Total	3	36	0	39	58	30	2227	5	2262	0	2186	8	0	2194	0	4495
% Approach	7.7%	92.3%	0%	-	-	1.3%	98.5%	0.2%	-	-	99.6%	0.4%	0%	-	-	-
% Total	0.1%	0.8%	0%	0.9%	-	0.7%	49.5%	0.1%	50.3%	-	48.6%	0.2%	0%	48.8%	-	-
Lights	3	23	0	26	-	22	2062	5	2089	-	2032	8	0	2040	-	4155
% Lights	100%	63.9%	0%	66.7%	-	73.3%	92.6%	100%	92.4%	-	93.0%	100%	0%	93.0%	-	92.4%
Single-Unit Trucks	0	0	0	0	-	0	45	0	45	-	42	0	0	42	-	87
% Single-Unit Trucks	0%	0%	0%	0%	-	0%	2.0%	0%	2.0%	-	1.9%	0%	0%	1.9%	-	1.9%
Articulated Trucks	0	0	0	0	-	0	104	0	104	-	107	0	0	107	-	211
% Articulated Trucks	0%	0%	0%	0%	-	0%	4.7%	0%	4.6%	-	4.9%	0%	0%	4.9%	-	4.7%
Buses	0	13	0	13	-	8	16	0	24	-	5	0	0	5	-	42
% Buses	0%	36.1%	0%	33.3%	-	26.7%	0.7%	0%	1.1%	-	0.2%	0%	0%	0.2%	-	0.9%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	58	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

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

Middle School Drive - TMC

Thu Mar 17, 2022

Full Length (7 AM-9 AM, 11 AM-1 PM, 4 PM-6 PM)

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

All Movements

ID: 929761, Location: 41.985238, -84.658485

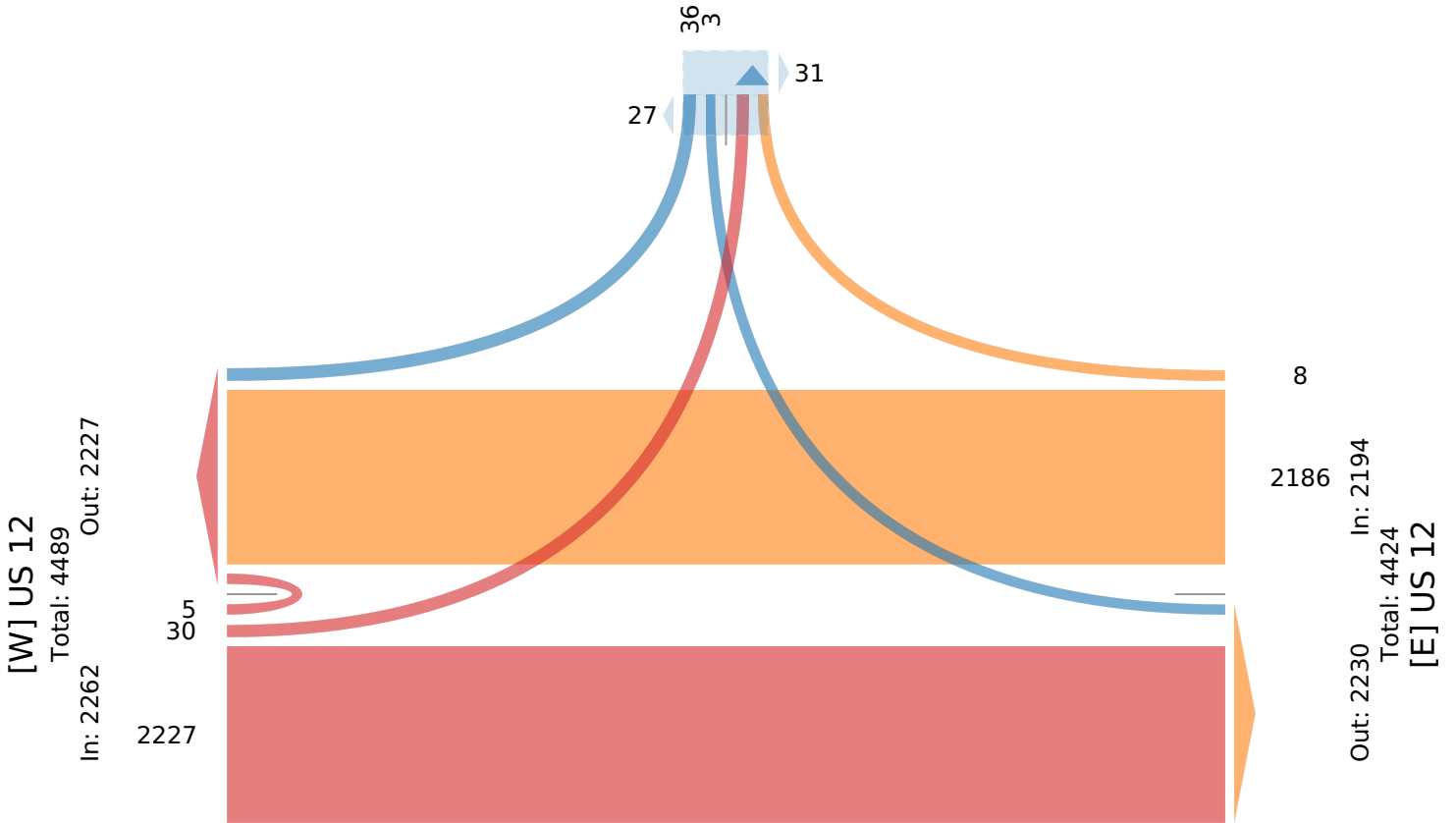


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Access

Total: 77

In: 39 Out: 38



Middle School Drive - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929761, Location: 41.985238, -84.658485



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

Leg Direction	Access Southbound					US 12 Eastbound					US 12 Westbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
2022-03-17 7:15AM	0	14	0	14	0	4	76	1	81	0	115	2	0	117	0	212
7:30AM	0	8	0	8	0	9	93	3	105	0	157	2	0	159	0	272
7:45AM	1	0	0	1	0	2	81	1	84	0	119	0	0	119	0	204
8:00AM	0	1	0	1	0	1	79	0	80	0	92	1	0	93	0	174
Total	1	23	0	24	0	16	329	5	350	0	483	5	0	488	0	862
% Approach	4.2%	95.8%	0%	-	-	4.6%	94.0%	1.4%	-	-	99.0%	1.0%	0%	-	-	-
% Total	0.1%	2.7%	0%	2.8%	-	1.9%	38.2%	0.6%	40.6%	-	56.0%	0.6%	0%	56.6%	-	-
PHF	0.250	0.411	-	0.429	-	0.444	0.884	0.417	0.833	-	0.769	0.625	-	0.767	-	0.792
Lights	1	10	0	11	-	14	288	5	307	-	454	5	0	459	-	777
% Lights	100%	43.5%	0%	45.8%	-	87.5%	87.5%	100%	87.7%	-	94.0%	100%	0%	94.1%	-	90.1%
Single-Unit Trucks	0	0	0	0	-	0	9	0	9	-	8	0	0	8	-	17
% Single-Unit Trucks	0%	0%	0%	0%	-	0%	2.7%	0%	2.6%	-	1.7%	0%	0%	1.6%	-	2.0%
Articulated Trucks	0	0	0	0	-	0	16	0	16	-	20	0	0	20	-	36
% Articulated Trucks	0%	0%	0%	0%	-	0%	4.9%	0%	4.6%	-	4.1%	0%	0%	4.1%	-	4.2%
Buses	0	13	0	13	-	2	16	0	18	-	1	0	0	1	-	32
% Buses	0%	56.5%	0%	54.2%	-	12.5%	4.9%	0%	5.1%	-	0.2%	0%	0%	0.2%	-	3.7%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

Middle School Drive - TMC

Thu Mar 17, 2022

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

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

All Movements

ID: 929761, Location: 41.985238, -84.658485



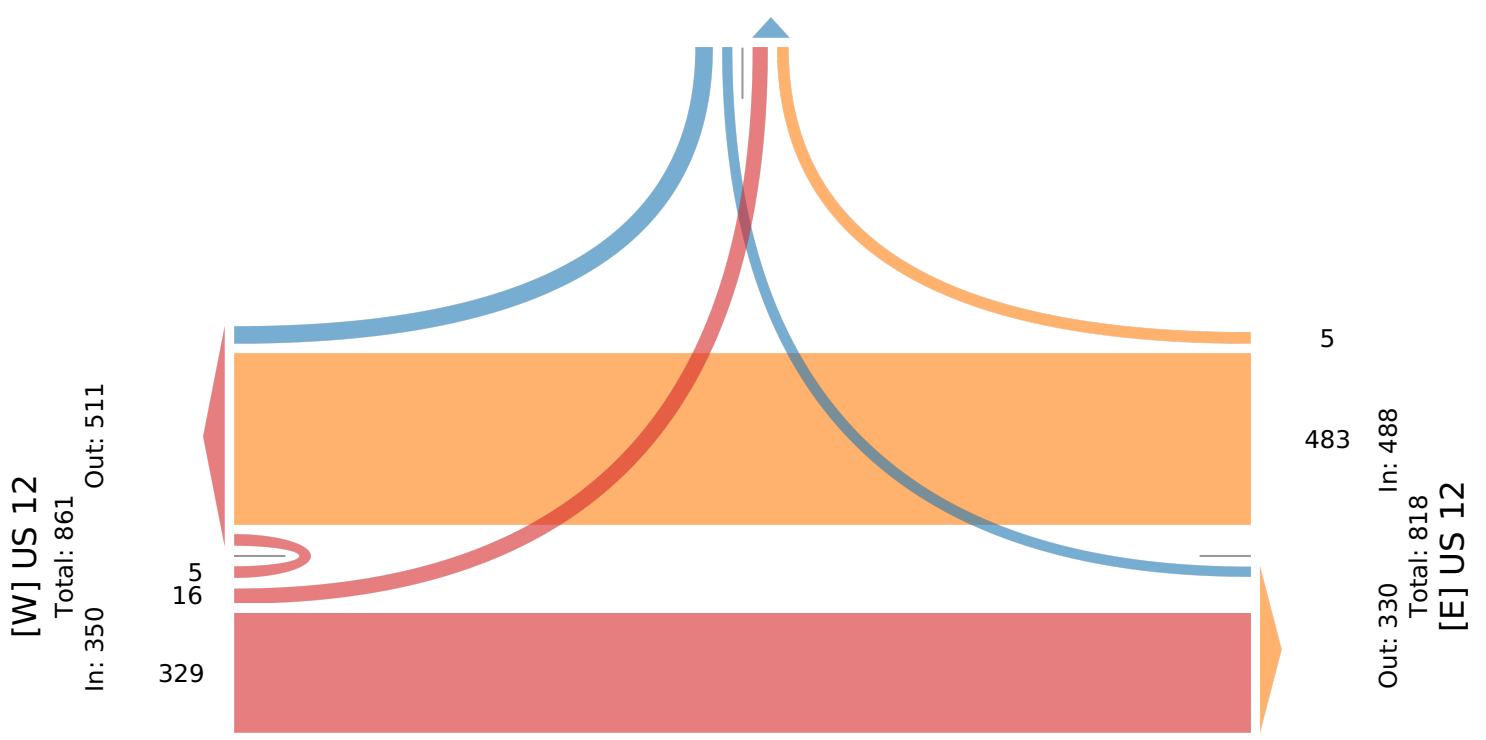
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Access

Total: 45

In: 24 Out: 21

23
1



Middle School Drive - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929761, Location: 41.985238, -84.658485



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

Leg Direction	Access Southbound					US 12 Eastbound					US 12 Westbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
Time																
2022-03-17 12:00PM	0	1	0	1	1	0	108	0	108	0	86	0	0	86	0	195
12:15PM	0	2	0	2	0	1	74	0	75	0	72	1	0	73	0	150
12:30PM	0	0	0	0	0	0	86	0	86	0	85	0	0	85	0	171
12:45PM	0	1	0	1	0	1	93	0	94	0	82	0	0	82	0	177
Total	0	4	0	4	1	2	361	0	363	0	325	1	0	326	0	693
% Approach	0%	100%	0%	-	-	0.6%	99.4%	0%	-	-	99.7%	0.3%	0%	-	-	-
% Total	0%	0.6%	0%	0.6%	-	0.3%	52.1%	0%	52.4%	-	46.9%	0.1%	0%	47.0%	-	-
PHF	-	0.500	-	0.500	-	0.500	0.836	-	0.840	-	0.945	0.250	-	0.948	-	0.888
Lights	0	4	0	4	-	2	321	0	323	-	296	1	0	297	-	624
% Lights	0%	100%	0%	100%	-	100%	88.9%	0%	89.0%	-	91.1%	100%	0%	91.1%	-	90.0%
Single-Unit Trucks	0	0	0	0	-	0	11	0	11	-	8	0	0	8	-	19
% Single-Unit Trucks	0%	0%	0%	0%	-	0%	3.0%	0%	3.0%	-	2.5%	0%	0%	2.5%	-	2.7%
Articulated Trucks	0	0	0	0	-	0	29	0	29	-	21	0	0	21	-	50
% Articulated Trucks	0%	0%	0%	0%	-	0%	8.0%	0%	8.0%	-	6.5%	0%	0%	6.4%	-	7.2%
Buses	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Buses	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

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

Middle School Drive - TMC

Thu Mar 17, 2022

Midday Peak (12 PM - 1 PM)

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

All Movements

ID: 929761, Location: 41.985238, -84.658485

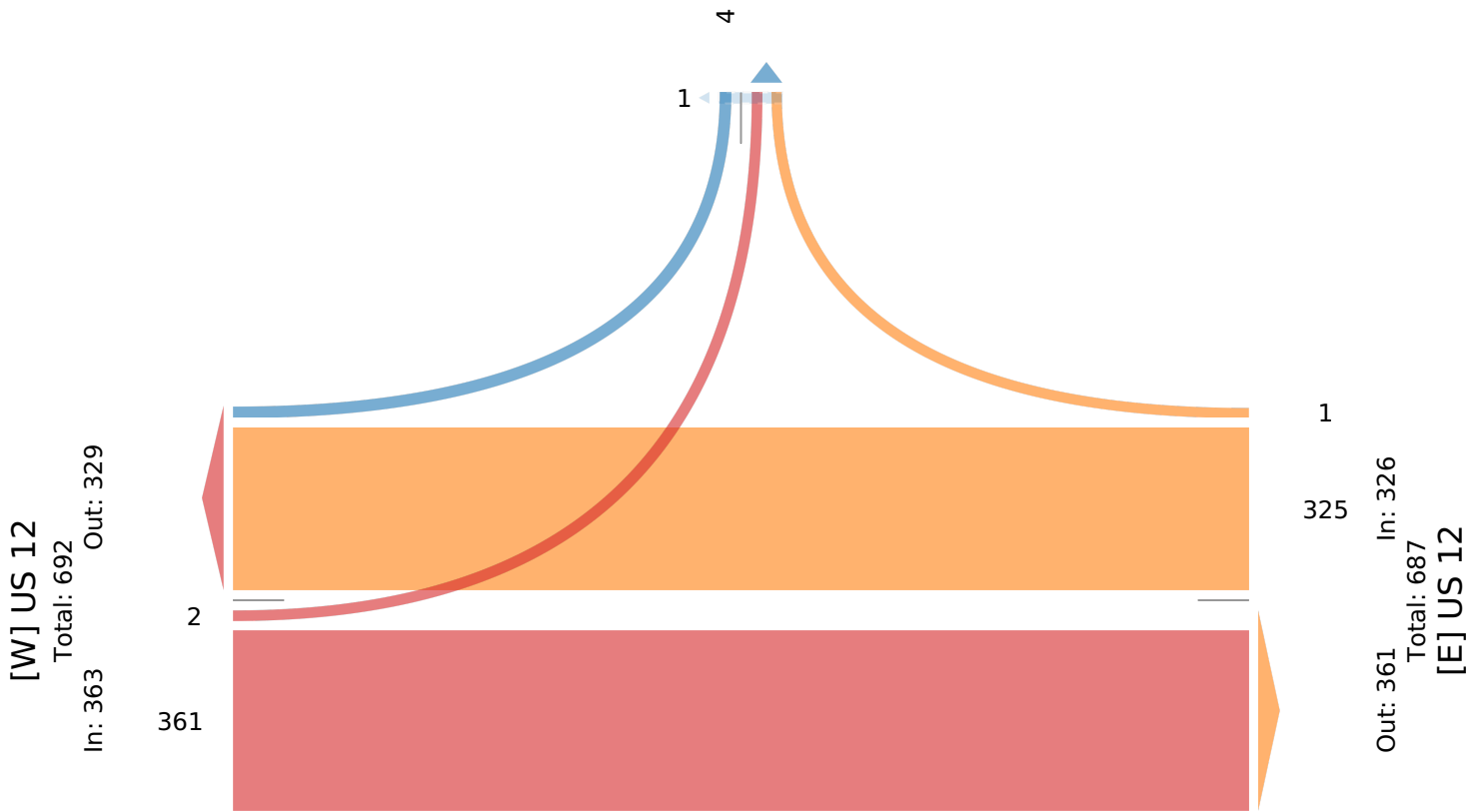


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

[N] Access

Total: 7

In: 4 Out: 3



Middle School Drive - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 929761, Location: 41.985238, -84.658485



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

Leg Direction	Access Southbound					US 12 Eastbound					US 12 Westbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
2022-03-17 4:30PM	0	0	0	0	2	0	115	0	115	0	103	0	0	103	0	218
4:45PM	0	1	0	1	1	0	132	0	132	0	93	1	0	94	0	227
5:00PM	0	2	0	2	2	2	153	0	155	0	111	1	0	112	0	269
5:15PM	1	0	0	1	0	0	129	0	129	0	95	0	0	95	0	225
Total	1	3	0	4	5	2	529	0	531	0	402	2	0	404	0	939
% Approach	25.0%	75.0%	0%	-	-	0.4%	99.6%	0%	-	-	99.5%	0.5%	0%	-	-	-
% Total	0.1%	0.3%	0%	0.4%	-	0.2%	56.3%	0%	56.5%	-	42.8%	0.2%	0%	43.0%	-	-
PHF	0.250	0.375	-	0.500	-	0.250	0.864	-	0.856	-	0.905	0.500	-	0.902	-	0.873
Lights	1	3	0	4	-	2	515	0	517	-	388	2	0	390	-	911
% Lights	100%	100%	0%	100%	-	100%	97.4%	0%	97.4%	-	96.5%	100%	0%	96.5%	-	97.0%
Single-Unit Trucks	0	0	0	0	-	0	3	0	3	-	1	0	0	1	-	4
% Single-Unit Trucks	0%	0%	0%	0%	-	0%	0.6%	0%	0.6%	-	0.2%	0%	0%	0.2%	-	0.4%
Articulated Trucks	0	0	0	0	-	0	11	0	11	-	12	0	0	12	-	23
% Articulated Trucks	0%	0%	0%	0%	-	0%	2.1%	0%	2.1%	-	3.0%	0%	0%	3.0%	-	2.4%
Buses	0	0	0	0	-	0	0	0	0	-	1	0	0	1	-	1
% Buses	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0.2%	0%	0%	0.2%	-	0.1%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

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

Middle School Drive - TMC

Thu Mar 17, 2022

PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 929761, Location: 41.985238, -84.658485

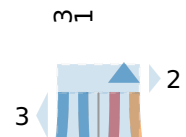


Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

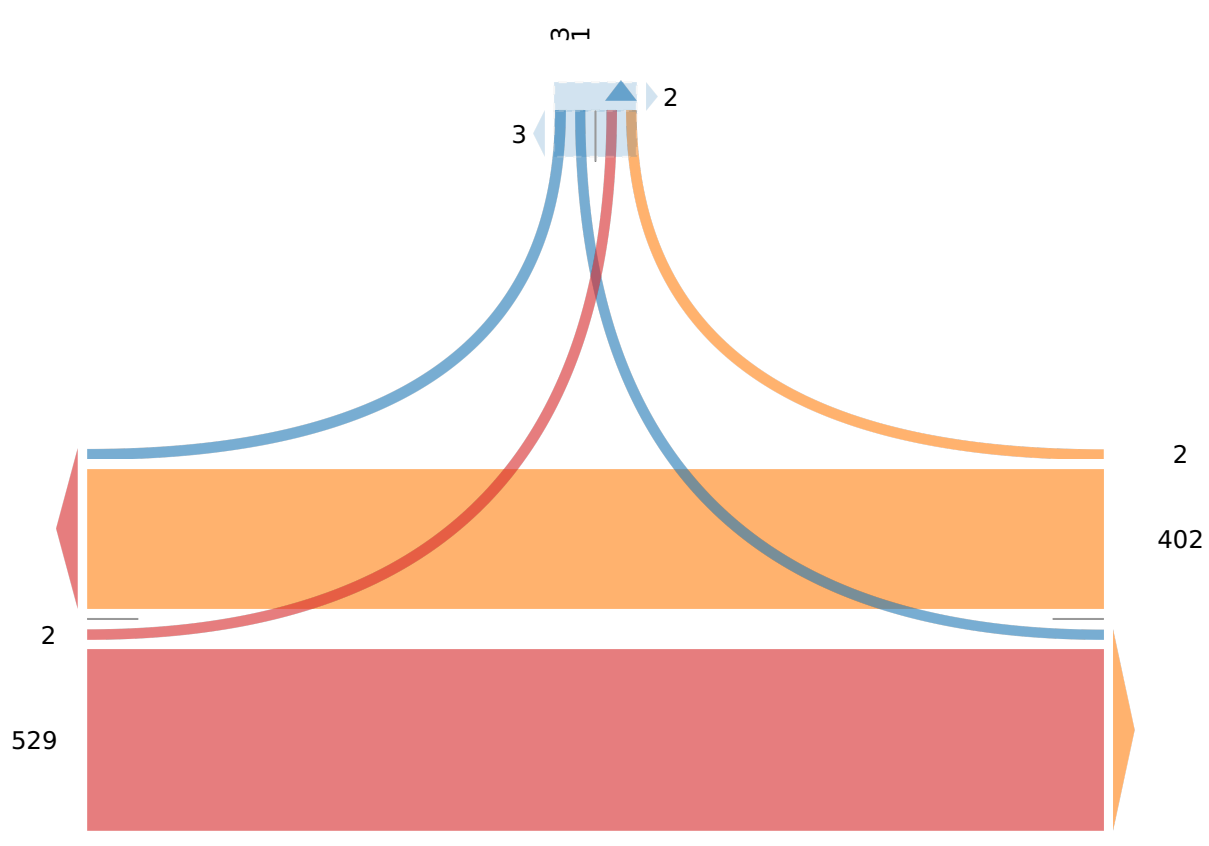
[N] Access

Total: 8

In: 4 Out: 4



[W] US 12
Total: 936
In: 531 Out: 405



[E] US 12
Total: 934
In: 404 Out: 530

Middle School Drive - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929756, Location: 41.985238, -84.658485



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

Leg Direction	Access Southbound					US 12 Eastbound					US 12 Westbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
2022-03-17 2:00PM	0	4	0	4	0	5	85	0	90	0	88	1	0	89	0	183
2:15PM	0	1	0	1	1	1	83	0	84	0	94	0	0	94	0	179
2:30PM	0	3	0	3	3	1	120	0	121	0	99	0	0	99	0	223
2:45PM	1	18	0	19	0	2	111	0	113	0	64	0	0	64	0	196
Hourly Total	1	26	0	27	4	9	399	0	408	0	345	1	0	346	0	781
3:00PM	1	2	0	3	5	1	144	0	145	0	108	0	0	108	0	256
3:15PM	1	1	0	2	0	1	109	0	110	0	87	0	0	87	0	199
3:30PM	2	1	0	3	5	1	119	0	120	0	86	0	0	86	0	209
3:45PM	1	4	0	5	0	3	134	0	137	0	79	0	0	79	0	221
Hourly Total	5	8	0	13	10	6	506	0	512	0	360	0	0	360	0	885
Total	6	34	0	40	14	15	905	0	920	0	705	1	0	706	0	1666
% Approach	15.0%	85.0%	0%	-	-	1.6%	98.4%	0%	-	-	99.9%	0.1%	0%	-	-	-
% Total	0.4%	2.0%	0%	2.4%	-	0.9%	54.3%	0%	55.2%	-	42.3%	0.1%	0%	42.4%	-	-
Lights	6	21	0	27	-	14	833	0	847	-	655	1	0	656	-	1530
% Lights	100%	61.8%	0%	67.5%	-	93.3%	92.0%	0%	92.1%	-	92.9%	100%	0%	92.9%	-	91.8%
Single-Unit Trucks	0	0	0	0	-	0	17	0	17	-	6	0	0	6	-	23
% Single-Unit Trucks	0%	0%	0%	0%	-	0%	1.9%	0%	1.8%	-	0.9%	0%	0%	0.8%	-	1.4%
Articulated Trucks	0	0	0	0	-	0	38	0	38	-	41	0	0	41	-	79
% Articulated Trucks	0%	0%	0%	0%	-	0%	4.2%	0%	4.1%	-	5.8%	0%	0%	5.8%	-	4.7%
Buses	0	13	0	13	-	1	17	0	18	-	3	0	0	3	-	34
% Buses	0%	38.2%	0%	32.5%	-	6.7%	1.9%	0%	2.0%	-	0.4%	0%	0%	0.4%	-	2.0%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	14	-	-	-	-	0	-	-	-	-	-	0
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

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

Middle School Drive - TMC

Thu Mar 17, 2022

Full Length (2 PM-4 PM)

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

All Movements

ID: 929756, Location: 41.985238, -84.658485



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

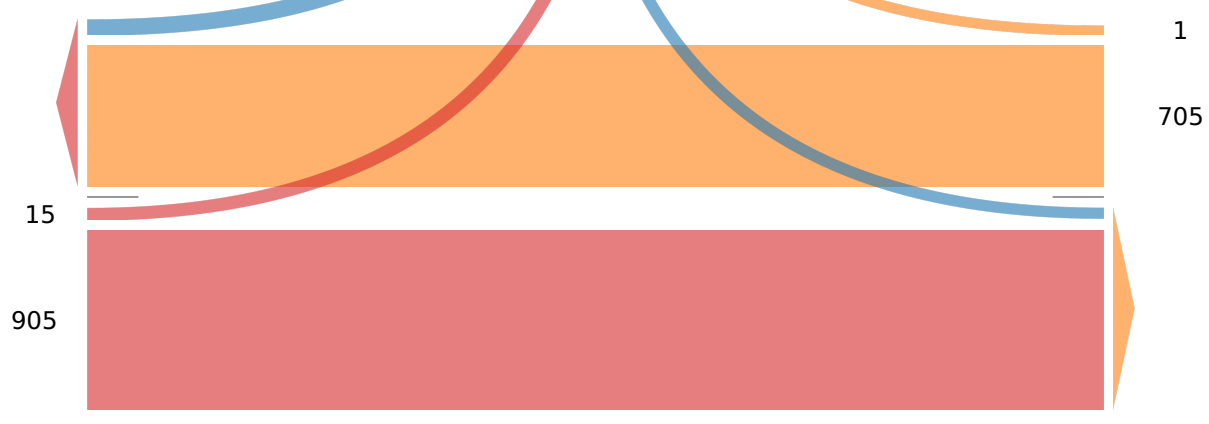
[N] Access

Total: 56

In: 40 Out: 16



[W] US 12
Total: 1659
In: 920 Out: 739



[E] US 12
Total: 1617
In: 706 Out: 911

Middle School Drive - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

All Movements

ID: 929756, Location: 41.985238, -84.658485



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

Leg Direction	Access Southbound					US 12 Eastbound					US 12 Westbound					Int
	L	R	U	App	Ped*	L	T	U	App	Ped*	T	R	U	App	Ped*	
Time																
2022-03-17 3:00PM	1	2	0	3	5	1	144	0	145	0	108	0	0	108	0	256
3:15PM	1	1	0	2	0	1	109	0	110	0	87	0	0	87	0	199
3:30PM	2	1	0	3	5	1	119	0	120	0	86	0	0	86	0	209
3:45PM	1	4	0	5	0	3	134	0	137	0	79	0	0	79	0	221
Total	5	8	0	13	10	6	506	0	512	0	360	0	0	360	0	885
% Approach	38.5%	61.5%	0%	-	-	1.2%	98.8%	0%	-	-	100%	0%	0%	-	-	-
% Total	0.6%	0.9%	0%	1.5%	-	0.7%	57.2%	0%	57.9%	-	40.7%	0%	0%	40.7%	-	-
PHF	0.625	0.500	-	0.650	-	0.500	0.878	-	0.883	-	0.833	-	-	0.833	-	0.864
Lights	5	8	0	13	-	5	468	0	473	-	334	0	0	334	-	820
% Lights	100%	100%	0%	100%	-	83.3%	92.5%	0%	92.4%	-	92.8%	0%	0%	92.8%	-	92.7%
Single-Unit Trucks	0	0	0	0	-	0	7	0	7	-	5	0	0	5	-	12
% Single-Unit Trucks	0%	0%	0%	0%	-	0%	1.4%	0%	1.4%	-	1.4%	0%	0%	1.4%	-	1.4%
Articulated Trucks	0	0	0	0	-	0	14	0	14	-	18	0	0	18	-	32
% Articulated Trucks	0%	0%	0%	0%	-	0%	2.8%	0%	2.7%	-	5.0%	0%	0%	5.0%	-	3.6%
Buses	0	0	0	0	-	1	17	0	18	-	3	0	0	3	-	21
% Buses	0%	0%	0%	0%	-	16.7%	3.4%	0%	3.5%	-	0.8%	0%	0%	0.8%	-	2.4%
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	10	-	-	-	-	0	-	-	-	-	0	-
% Pedestrians	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

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

Middle School Drive - TMC

Thu Mar 17, 2022

PM Peak (3 PM - 4 PM) - Overall Peak Hour

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

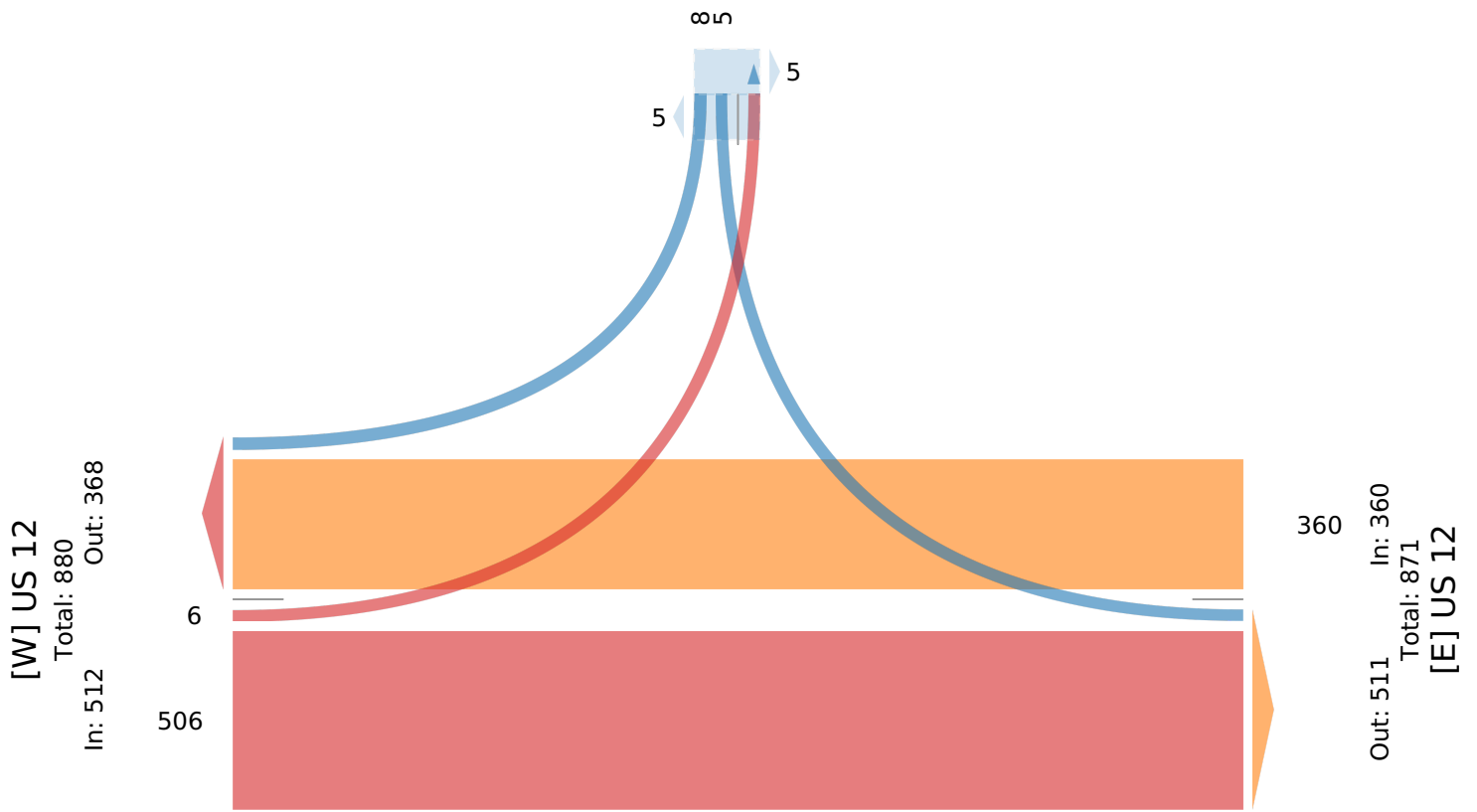
All Movements

ID: 929756, Location: 41.985238, -84.658485



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

[N] Access
Total: 19
In: 13 Out: 6



Level of Service Criteria for Stop Sign Controlled Intersections

The level of service criteria are given in Exhibit 20-2. As used here, control delay is defined as the total elapsed time from the time a vehicle stops at the end of the queue until the vehicle departs from the stop line; this time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position, including deceleration of vehicles from free-flow speed to the speed of vehicles in queue.

The average total delay for any particular movement is a function of the number of vehicles in queue, the number of vehicles in the queue, and the number of vehicles in the queue.

When signals are present on the major street, upstream of the subject intersection, flows may not be random but will likely have some platoon structure. Although the procedures in this chapter provide a method for approximating the operations of a TWSC intersection with an upstream signal, the operations of such an intersection is arguably best handled by including it in a complete simulation.

Exhibit 20-2. Level of Service Criteria for Stop-Controlled Intersections (Motor Vehicles)

LEVEL OF SERVICE	AVERAGE CONTROL DELAY (sec/veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Average total delay less than 10 sec/veh is defined as Level of Service (LOS) A. Follow-up times of less than 5 sec have been measured when there is no conflicting traffic for a minor street movement, so control delays of less than 10 sec/veh are appropriate for low flow conditions. A total delay of 50 sec/veh is assumed as the break point between LOS E and F.

Additionally, several driver behavior considerations combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, where drivers on the minor approaches to unsignalized intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized than signalized intersections. For these reasons, it is considered that the total delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection.

LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queueing on the minor approaches. The method, however, is based on a constant critical gap size - that is, the critical gap remains constant, no matter how long the side street motorist waits. LOS F may also appear in the form of side street vehicles' selecting smaller-than-usual gaps. In such cases, safety may be a problem and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior. The latter is more difficult to observe on the field than queueing, which is more obvious.

Level of Service for Signalized Intersections

Level of service for signalized intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS can be characterized for the entire intersection, each intersection approach, and each lane group. Specifically, level-of-service (LOS) criteria are stated in terms of the average stopped delay per vehicle. The criteria are given in Exhibit 19-8. Delay may be measured in the field or estimated using procedures presented later in this chapter. Delay is a complex measure and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group in question.

LOS A describes operations with a control delay of 10 s/veh or less. This level is typically assigned when the volume-to-capacity ratio is low and either progression is extremely favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during a green indication and travel through the intersection without stopping.

LOS B describes operations with control delay between 10 and 20 s/veh. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

Exhibit 19.8. Level-of-Service Criteria for Signalized Intersections (Motorized Vehicles)

LEVEL OF SERVICE	STOPPED DELAY PER VEHICLE (SEC)
A	≤ 10.0
B	> 10.0 and ≤ 20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	> 80.0

1. If the v/c ratio for a lane group exceeds 1.0, a LOS F is assigned to the individual lane group. LOS for approach-based and intersection-wide assessments are determined solely by the control delay.

LOS C describes operations with control delay between 20 and 35 s/veh. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e. one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicle stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D describes operations with control delay between 35 and 55 s/veh. This level is typically assigned when when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.






















LOS E describes operations with control delay between 55 and 80 s/veh. This level is typically assigned when when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level, considered to be unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of the intersection. This level is typically assigned when the volume-to-capacity ratio is high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: Highway Capacity Manual, 6th Edition. Transportation Research Board, National Research Council

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	267	45	499	260	2	14	3	293	7	7	6
Future Volume (veh/h)	0	267	45	499	260	2	14	3	293	7	7	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.98		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1826	1826	1826	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	0	376	63	648	338	3	17	4	349	10	10	8
Peak Hour Factor	0.71	0.71	0.71	0.77	0.77	0.77	0.84	0.84	0.84	0.71	0.71	0.71
Percent Heavy Veh, %	9	9	9	5	5	5	9	9	9	6	6	6
Cap, veh/h	687	452	75	733	290	237	137	32	669	18	18	15
Arrive On Green	0.00	0.16	0.16	0.58	0.26	0.26	0.10	0.10	0.10	0.03	0.03	0.03
Sat Flow, veh/h	1682	2852	472	1739	1826	1492	1374	323	1490	605	605	484
Grp Volume(v), veh/h	0	219	220	648	338	3	21	0	349	28	0	0
Grp Sat Flow(s),veh/h/ln	1682	1678	1646	1739	1826	1492	1698	0	1490	1694	0	0
Q Serve(g_s), s	0.0	8.9	9.1	15.2	11.1	0.1	0.8	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	8.9	9.1	15.2	11.1	0.1	0.8	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.29	1.00		1.00	0.81		1.00	0.36		0.29
Lane Grp Cap(c), veh/h	687	266	261	733	290	237	170	0	669	51	0	0
V/C Ratio(X)	0.00	0.82	0.84	0.88	1.17	0.01	0.12	0.00	0.52	0.55	0.00	0.00
Avail Cap(c_a), veh/h	687	266	261	733	290	237	201	0	696	194	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	28.5	28.6	11.2	25.7	21.7	28.7	0.0	13.9	33.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	24.3	26.7	11.8	104.9	0.1	0.3	0.0	0.6	9.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.1	5.2	7.0	12.4	0.0	0.3	0.0	3.8	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	52.8	55.2	23.1	130.6	21.8	29.0	0.0	14.6	42.5	0.0	0.0
LnGrp LOS	A	D	E	C	F	C	C	A	B	D	A	A
Approach Vol, veh/h		439			989			370				28
Approach Delay, s/veh		54.0			59.8			15.4				42.5
Approach LOS		D			E			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.2	18.0		12.7	31.2	18.0		8.1				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	17.1	11.1		8.3	17.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	17.2	11.1		2.8	0.0	13.1		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	49.2
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	487	45	9	576	11	128	5	2	2	3	57
Future Volume (veh/h)	35	487	45	9	576	11	128	5	2	2	3	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1781	1781	1781	1826	1826	1826	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	44	616	57	11	711	14	188	7	3	3	5	95
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.68	0.68	0.68	0.60	0.60	0.60
Percent Heavy Veh, %	8	8	8	5	5	5	1	1	1	2	2	2
Cap, veh/h	564	2087	193	599	2320	46	332	9	4	55	19	251
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	692	3130	289	744	3479	68	1361	51	22	14	110	1472
Grp Volume(v), veh/h	44	333	340	11	354	371	198	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	692	1692	1726	744	1735	1813	1434	0	0	1596	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	9.0	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.04	0.95		0.02	0.03		0.92
Lane Grp Cap(c), veh/h	564	1128	1151	599	1157	1209	344	0	0	325	0	0
V/C Ratio(X)	0.08	0.29	0.30	0.02	0.31	0.31	0.57	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	564	1128	1151	599	1157	1209	572	0	0	598	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.95	0.95	0.95	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.6	0.0	0.0	25.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.6	0.6	0.1	0.7	0.6	1.5	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.0	0.2	0.2	3.2	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.2	0.6	0.6	0.1	0.7	0.6	29.1	0.0	0.0	26.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		717			736			198			103	
Approach Delay, s/veh		0.6			0.6			29.1			26.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.2		17.8		52.2		17.8				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		24.1		34.5		24.1				
Max Q Clear Time (g_c+11), s		2.0		6.0		2.0		11.0				
Green Ext Time (p_c), s		0.8		0.5		0.8		0.9				

Intersection Summary

HCM 6th Ctrl Delay	5.3
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	326	80	92	416	23	42	87	64	31	136	138
Future Volume (veh/h)	85	326	80	92	416	23	42	87	64	31	136	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1781	1781	1781	1885	1885	1885
Adj Flow Rate, veh/h	115	441	108	116	527	29	65	134	98	48	209	212
Peak Hour Factor	0.74	0.74	0.74	0.79	0.79	0.79	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	9	9	9	7	7	7	8	8	8	1	1	1
Cap, veh/h	440	1372	333	524	1688	93	127	232	146	92	260	244
Arrive On Green	1.00	1.00	1.00	0.51	0.51	0.51	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	802	2671	648	820	3287	181	205	736	463	114	826	775
Grp Volume(v), veh/h	115	276	273	116	273	283	297	0	0	469	0	0
Grp Sat Flow(s),veh/h/ln	802	1678	1641	820	1706	1761	1404	0	0	1715	0	0
Q Serve(g_s), s	2.5	0.0	0.0	5.6	6.5	6.5	0.0	0.0	0.0	5.7	0.0	0.0
Cycle Q Clear(g_c), s	9.0	0.0	0.0	5.6	6.5	6.5	12.1	0.0	0.0	17.8	0.0	0.0
Prop In Lane	1.00		0.40	1.00		0.10	0.22		0.33	0.10		0.45
Lane Grp Cap(c), veh/h	440	862	843	524	876	904	505	0	0	597	0	0
V/C Ratio(X)	0.26	0.32	0.32	0.22	0.31	0.31	0.59	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	440	862	843	524	876	904	675	0	0	795	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.8	0.0	0.0	9.6	9.9	9.9	20.2	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.9	1.0	1.0	0.9	0.9	1.1	0.0	0.0	3.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	1.0	2.4	2.4	4.1	0.0	0.0	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.2	0.9	1.0	10.6	10.8	10.8	21.3	0.0	0.0	26.2	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	C	A	A	C	A	A
Approach Vol, veh/h		664			672			297			469	
Approach Delay, s/veh		1.2			10.8			21.3			26.2	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.4		28.6		41.4		28.6				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		27.5		30.5		27.5		30.5				
Max Q Clear Time (g_c+1), s		11.0		14.1		8.5		19.8				
Green Ext Time (p_c), s		0.8		1.9		0.7		2.3				
Intersection Summary												
HCM 6th Ctrl Delay				12.7								
HCM 6th LOS				B								

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
AM Peak Hour

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	37	332	52	92	488	10	3	9	66	7	10	40
Future Vol, veh/h	37	332	52	92	488	10	3	9	66	7	10	40
Conflicting Peds, #/hr	8	0	0	0	0	8	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	12	12	12	8	8	8	0	0	0	0	0	0
Mvmt Flow	47	420	66	121	642	13	5	15	106	12	17	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	663	0	0	486	0	0	1119	1452	243	1211	1479	336
Stage 1	-	-	-	-	-	-	547	547	-	899	899	-
Stage 2	-	-	-	-	-	-	572	905	-	312	580	-
Critical Hdwy	4.34	-	-	4.26	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.32	-	-	2.28	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	857	-	-	1032	-	-	164	132	764	140	127	666
Stage 1	-	-	-	-	-	-	494	521	-	304	360	-
Stage 2	-	-	-	-	-	-	477	358	-	679	503	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	850	-	-	1032	-	-	113	109	764	94	105	661
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	109	-	94	105	-
Stage 1	-	-	-	-	-	-	467	492	-	285	315	-
Stage 2	-	-	-	-	-	-	359	314	-	536	475	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1.4			18.1			28.3		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	399	850	-	-	1032	-	-	248
HCM Lane V/C Ratio	0.315	0.055	-	-	0.117	-	-	0.383
HCM Control Delay (s)	18.1	9.5	-	-	9	-	-	28.3
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0.4	-	-	1.7

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	387	564	6	1	26
Future Vol, veh/h	18	387	564	6	1	26
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	83	83	77	77	60	60
Heavy Vehicles, %	12	12	6	6	54	54
Mvmt Flow	22	466	732	8	2	43

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	740	0	-	0	1013 736
Stage 1	-	-	-	-	736 -
Stage 2	-	-	-	-	277 -
Critical Hdwy	4.28	-	-	-	7.41 7.01
Critical Hdwy Stg 1	-	-	-	-	6.21 -
Critical Hdwy Stg 2	-	-	-	-	6.61 -
Follow-up Hdwy	2.314	-	-	-	4.013 3.813
Pot Cap-1 Maneuver	811	-	-	-	186 324
Stage 1	-	-	-	-	369 -
Stage 2	-	-	-	-	627 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	811	-	-	-	181 324
Mov Cap-2 Maneuver	-	-	-	-	281 -
Stage 1	-	-	-	-	359 -
Stage 2	-	-	-	-	627 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	18
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	811	-	-	-	322
HCM Lane V/C Ratio	0.027	-	-	-	0.14
HCM Control Delay (s)	9.6	-	-	-	18
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↖	↗		↕	
Traffic Volume (veh/h)	1	161	40	349	203	1	45	6	454	1	1	2
Future Volume (veh/h)	1	161	40	349	203	1	45	6	454	1	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1752	1752	1752	1767	1767	1767	1900	1900	1900
Adj Flow Rate, veh/h	1	175	43	375	218	1	51	7	516	2	2	3
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88	0.60	0.60	0.60
Percent Heavy Veh, %	16	16	16	10	10	10	9	9	9	0	0	0
Cap, veh/h	666	469	112	753	326	274	160	22	617	5	5	7
Arrive On Green	0.30	0.19	0.19	0.30	0.19	0.19	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1584	2521	603	1668	1752	1473	1488	204	1490	496	496	745
Grp Volume(v), veh/h	1	108	110	375	218	1	58	0	516	7	0	0
Grp Sat Flow(s),veh/h/ln	1584	1580	1545	1668	1752	1473	1692	0	1490	1738	0	0
Q Serve(g_s), s	0.0	3.9	4.1	0.8	7.5	0.0	2.1	0.0	0.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	3.9	4.1	0.8	7.5	0.0	2.1	0.0	0.3	0.3	0.0	0.0
Prop In Lane	1.00		0.39	1.00		1.00	0.88		1.00	0.29		0.43
Lane Grp Cap(c), veh/h	666	294	288	753	326	274	182	0	617	16	0	0
V/C Ratio(X)	0.00	0.37	0.38	0.50	0.67	0.00	0.32	0.00	0.84	0.44	0.00	0.00
Avail Cap(c_a), veh/h	666	294	288	753	326	274	216	0	646	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	23.1	23.2	14.3	24.6	21.5	26.8	0.0	17.1	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.5	3.8	0.5	10.3	0.0	1.0	0.0	9.1	18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.6	1.6	3.7	3.9	0.0	0.8	0.0	7.5	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	26.6	27.0	14.8	34.9	21.6	27.8	0.0	26.2	50.1	0.0	0.0
LnGrp LOS	B	C	C	B	C	C	C	A	C	D	A	A
Approach Vol, veh/h		219			594			574				7
Approach Delay, s/veh		26.7			22.2			26.4				50.1
Approach LOS		C			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	19.0		12.7	26.7	19.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	11.1	12.1		8.3	11.1	12.1		8.0				
Max Q Clear Time (g_c+I1), s	2.8	6.1		4.1	2.0	9.5		2.3				
Green Ext Time (p_c), s	0.8	0.1		1.0	0.0	0.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	513	64	13	424	14	90	9	8	6	9	39
Future Volume (veh/h)	39	513	64	13	424	14	90	9	8	6	9	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1781	1781	1781	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	45	590	74	14	446	15	118	12	11	8	11	49
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.76	0.76	0.76	0.80	0.80	0.80
Percent Heavy Veh, %	9	9	9	8	8	8	2	2	2	0	0	0
Cap, veh/h	726	2100	263	625	2338	79	258	17	15	74	47	152
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	879	3001	376	735	3341	112	1255	134	118	95	378	1221
Grp Volume(v), veh/h	45	329	335	14	226	235	141	0	0	68	0	0
Grp Sat Flow(s),veh/h/ln	879	1678	1699	735	1692	1761	1507	0	0	1694	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.06	0.84		0.08	0.12		0.72
Lane Grp Cap(c), veh/h	726	1175	1189	625	1184	1233	290	0	0	273	0	0
V/C Ratio(X)	0.06	0.28	0.28	0.02	0.19	0.19	0.49	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	726	1175	1189	625	1184	1233	610	0	0	646	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.81	0.81	0.81	0.99	0.99	0.99	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.2	0.0	0.0	25.9	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.1	0.4	0.3	1.3	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.0	0.1	0.1	2.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.1	0.5	0.5	0.1	0.4	0.3	28.5	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		709			475			141			68	
Approach Delay, s/veh		0.5			0.3			28.5			26.4	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.0		14.0		51.0		14.0				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		30.5		23.1		30.5		23.1				
Max Q Clear Time (g_c+1), s		2.0		4.4		2.0		7.7				
Green Ext Time (p_c), s		0.8		0.3		0.5		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				4.5								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	376	46	35	316	22	33	34	22	20	39	102
Future Volume (veh/h)	105	376	46	35	316	22	33	34	22	20	39	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1900	1900	1900	1811	1811	1811
Adj Flow Rate, veh/h	118	422	52	37	333	23	39	40	26	22	43	112
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91
Percent Heavy Veh, %	9	9	9	7	7	7	0	0	0	6	6	6
Cap, veh/h	714	1949	239	696	2111	145	144	133	66	80	72	153
Arrive On Green	1.00	1.00	1.00	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	968	2942	360	883	3187	219	445	867	432	113	469	1003
Grp Volume(v), veh/h	118	240	234	37	178	178	105	0	0	177	0	0
Grp Sat Flow(s),veh/h/ln	968	1678	1624	883	1706	1699	1743	0	0	1585	0	0
Q Serve(g_s), s	0.6	0.0	0.0	1.0	2.5	2.6	0.0	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	1.0	2.5	2.6	3.4	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.13	0.37		0.25	0.12		0.63
Lane Grp Cap(c), veh/h	714	1112	1076	696	1130	1126	342	0	0	305	0	0
V/C Ratio(X)	0.17	0.22	0.22	0.05	0.16	0.16	0.31	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	714	1112	1076	696	1130	1126	733	0	0	701	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	3.9	4.1	4.1	24.8	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.4	0.5	0.1	0.3	0.3	0.5	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.2	0.7	0.7	0.7	1.5	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.6	0.4	0.5	4.0	4.4	4.4	25.3	0.0	0.0	27.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		592			393			105			177	
Approach Delay, s/veh		0.5			4.4			25.3			27.9	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.6		16.4		48.6		16.4				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		26.5		26.5		26.5		26.5				
Max Q Clear Time (g_c+I1), s		5.2		5.4		4.6		8.9				
Green Ext Time (p_c), s		0.6		0.5		0.4		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				7.6								
HCM 6th LOS				A								

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗			↕↗			↕↗	
Traffic Vol, veh/h	32	372	14	18	338	7	6	4	18	11	7	29
Future Vol, veh/h	32	372	14	18	338	7	6	4	18	11	7	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	11	11	11	9	9	9	0	0	0	0	0	0
Mvmt Flow	41	471	18	24	445	9	10	6	29	18	12	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	454	0	0	489	0	0	839	1064	246	820	1069	227
Stage 1	-	-	-	-	-	-	562	562	-	498	498	-
Stage 2	-	-	-	-	-	-	277	502	-	322	571	-
Critical Hdwy	4.32	-	-	4.28	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.31	-	-	2.29	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1042	-	-	1023	-	-	262	225	760	270	223	782
Stage 1	-	-	-	-	-	-	484	513	-	528	548	-
Stage 2	-	-	-	-	-	-	712	545	-	670	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1042	-	-	1023	-	-	224	211	759	241	209	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	224	211	-	241	209	-
Stage 1	-	-	-	-	-	-	465	493	-	507	535	-
Stage 2	-	-	-	-	-	-	638	532	-	610	488	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.4			15.1			16		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	1042	-	-	1023	-	-	404
HCM Lane V/C Ratio	0.112	0.039	-	-	0.023	-	-	0.194
HCM Control Delay (s)	15.1	8.6	-	-	8.6	-	-	16
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.7

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	399	359	1	0	4
Future Vol, veh/h	2	399	359	1	0	4
Conflicting Peds, #/hr	1	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	84	84	95	95	60	60
Heavy Vehicles, %	11	11	9	9	0	0
Mvmt Flow	2	475	378	1	0	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	380	0	-	0	622 380
Stage 1	-	-	-	-	380 -
Stage 2	-	-	-	-	242 -
Critical Hdwy	4.265	-	-	-	6.6 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.3045	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1122	-	-	-	438 671
Stage 1	-	-	-	-	696 -
Stage 2	-	-	-	-	782 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1121	-	-	-	436 670
Mov Cap-2 Maneuver	-	-	-	-	533 -
Stage 1	-	-	-	-	694 -
Stage 2	-	-	-	-	781 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1121	-	-	-	670
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	8.2	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	296	51	394	225	3	43	4	545	4	0	0
Future Volume (veh/h)	1	296	51	394	225	3	43	4	545	4	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	0.99		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	348	60	433	247	3	51	5	649	7	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.84	0.84	0.84	0.60	0.60	0.60
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	0	0	0
Cap, veh/h	665	496	84	691	314	262	205	20	665	17	0	0
Arrive On Green	0.30	0.17	0.17	0.10	0.06	0.06	0.13	0.13	0.13	0.01	0.00	0.00
Sat Flow, veh/h	1711	2903	495	1753	1841	1535	1603	157	1542	1809	0	0
Grp Volume(v), veh/h	1	203	205	433	247	3	56	0	649	7	0	0
Grp Sat Flow(s),veh/h/ln	1711	1706	1691	1753	1841	1535	1761	0	1542	1810	0	0
Q Serve(g_s), s	0.0	7.3	7.4	9.1	8.6	0.1	1.9	0.0	7.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.3	7.4	9.1	8.6	0.1	1.9	0.0	7.1	0.3	0.0	0.0
Prop In Lane	1.00		0.29	1.00		1.00	0.91		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	665	291	289	691	314	262	225	0	665	17	0	0
V/C Ratio(X)	0.00	0.70	0.71	0.63	0.79	0.01	0.25	0.00	0.98	0.42	0.00	0.00
Avail Cap(c_a), veh/h	665	291	289	691	314	262	225	0	665	223	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.2	25.4	25.4	22.6	29.5	25.5	25.5	0.0	18.2	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	12.9	13.8	1.8	17.4	0.1	0.6	0.0	28.8	16.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	3.8	6.9	5.5	0.0	0.8	0.0	13.4	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.2	38.3	39.2	24.4	46.9	25.6	26.1	0.0	47.1	48.3	0.0	0.0
LnGrp LOS	B	D	D	C	D	C	C	A	D	D	A	A
Approach Vol, veh/h		409			683			705				7
Approach Delay, s/veh		38.7			32.6			45.4				48.3
Approach LOS		D			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	18.0		14.0	26.4	18.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	12.1	11.1		8.3	12.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	11.1	9.4		9.1	2.0	10.6		2.3				
Green Ext Time (p_c), s	0.2	0.1		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary
2: West Street/Water Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	713	78	3	519	20	73	4	7	6	6	30
Future Volume (veh/h)	54	713	78	3	519	20	73	4	7	6	6	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1841	1841	1841	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	767	84	3	564	22	78	4	7	7	7	34
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	0	0	0
Cap, veh/h	707	2325	255	565	2491	97	228	12	12	76	35	114
Arrive On Green	0.97	0.97	0.97	1.00	1.00	1.00	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	821	3203	351	637	3431	134	1259	120	118	123	353	1155
Grp Volume(v), veh/h	58	422	429	3	287	299	89	0	0	48	0	0
Grp Sat Flow(s),veh/h/ln	821	1763	1790	637	1749	1816	1497	0	0	1631	0	0
Q Serve(g_s), s	0.2	0.8	0.8	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.8	0.8	0.8	0.0	0.0	3.5	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.07	0.88		0.08	0.15		0.71
Lane Grp Cap(c), veh/h	707	1280	1300	565	1270	1318	252	0	0	224	0	0
V/C Ratio(X)	0.08	0.33	0.33	0.01	0.23	0.23	0.35	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	707	1280	1300	565	1270	1318	522	0	0	532	0	0
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.70	0.70	0.70	0.98	0.98	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.3	0.3	0.3	0.0	0.0	0.0	27.9	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.5	0.5	0.0	0.4	0.4	0.8	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3	0.0	0.1	0.1	1.3	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.5	0.8	0.8	0.0	0.4	0.4	28.7	0.0	0.0	27.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		909			589			89				48
Approach Delay, s/veh		0.8			0.4			28.7				27.7
Approach LOS		A			A			C				C
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.7		12.3		52.7		12.3				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		19.1		34.5		19.1				
Max Q Clear Time (g_c+I1), s		2.8		3.8		2.8		5.5				
Green Ext Time (p_c), s		1.0		0.1		0.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				3.0								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

2022 Existing Geometry (5-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	525	46	37	380	21	29	70	61	32	76	133
Future Volume (veh/h)	155	525	46	37	380	21	29	70	61	32	76	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	174	590	52	40	413	23	40	96	84	42	99	173
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.73	0.73	0.73	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	3	3	3
Cap, veh/h	608	1878	165	568	1958	109	109	195	147	95	137	207
Arrive On Green	1.00	1.00	1.00	0.59	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	942	3202	282	779	3339	185	191	850	643	141	597	905
Grp Volume(v), veh/h	174	324	318	40	217	219	220	0	0	314	0	0
Grp Sat Flow(s),veh/h/ln	942	1763	1721	779	1763	1761	1684	0	0	1643	0	0
Q Serve(g_s), s	1.8	0.0	0.0	1.5	3.8	3.8	0.0	0.0	0.0	4.4	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	0.0	1.5	3.8	3.8	7.3	0.0	0.0	11.7	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.11	0.18		0.38	0.13		0.55
Lane Grp Cap(c), veh/h	608	1034	1009	568	1034	1033	451	0	0	439	0	0
V/C Ratio(X)	0.29	0.31	0.31	0.07	0.21	0.21	0.49	0.00	0.00	0.71	0.00	0.00
Avail Cap(c_a), veh/h	608	1034	1009	568	1034	1033	635	0	0	623	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.3	0.0	0.0	5.9	6.3	6.3	22.1	0.0	0.0	23.7	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.8	0.8	0.2	0.5	0.5	0.8	0.0	0.0	2.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	0.2	1.3	1.3	2.9	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.4	0.8	0.8	6.1	6.8	6.8	22.9	0.0	0.0	26.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		816			476			220			314	
Approach Delay, s/veh		0.9			6.8			22.9			26.0	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.6		21.4		43.6		21.4				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		30.5		22.5		30.5		22.5				
Max Q Clear Time (g_c+1), s		7.6		9.3		5.8		13.7				
Green Ext Time (p_c), s		0.8		1.1		0.5		1.2				
Intersection Summary												
HCM 6th Ctrl Delay				9.4								
HCM 6th LOS				A								

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

2022 Existing Geometry (5-Lanes)
PM Peak Hour

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	53	537	28	36	391	19	7	14	40	11	19	40
Future Vol, veh/h	53	537	28	36	391	19	7	14	40	11	19	40
Conflicting Peds, #/hr	5	0	0	0	0	5	4	0	2	2	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	87	87	87	76	76	76	66	66	66
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	0	0	0
Mvmt Flow	62	624	33	41	449	22	9	18	53	17	29	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	476	0	0	657	0	0	1090	1323	331	994	1328	245
Stage 1	-	-	-	-	-	-	765	765	-	547	547	-
Stage 2	-	-	-	-	-	-	325	558	-	447	781	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1075	-	-	920	-	-	172	158	671	202	157	762
Stage 1	-	-	-	-	-	-	366	415	-	494	521	-
Stage 2	-	-	-	-	-	-	667	515	-	566	408	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1070	-	-	920	-	-	123	141	670	154	141	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	141	-	154	141	-
Stage 1	-	-	-	-	-	-	345	391	-	463	495	-
Stage 2	-	-	-	-	-	-	550	489	-	467	384	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.7			22.7			26.7		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	283	1070	-	-	920	-	-	270
HCM Lane V/C Ratio	0.284	0.058	-	-	0.045	-	-	0.393
HCM Control Delay (s)	22.7	8.6	-	-	9.1	-	-	26.7
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.1	0.2	-	-	0.1	-	-	1.8

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	586	443	2	1	3
Future Vol, veh/h	2	586	443	2	1	3
Conflicting Peds, #/hr	5	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	86	86	90	90	60	60
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	2	681	492	2	2	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	499	0	-	0	843 498
Stage 1	-	-	-	-	498 -
Stage 2	-	-	-	-	345 -
Critical Hdwy	4.145	-	-	-	6.6 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2285	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1057	-	-	-	321 576
Stage 1	-	-	-	-	615 -
Stage 2	-	-	-	-	694 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1052	-	-	-	317 573
Mov Cap-2 Maneuver	-	-	-	-	440 -
Stage 1	-	-	-	-	611 -
Stage 2	-	-	-	-	691 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1052	-	-	-	533
HCM Lane V/C Ratio	0.002	-	-	-	0.013
HCM Control Delay (s)	8.4	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.6	3.6	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.3
Total Del/Veh (s)	9.5	3.0	10.7	3.2	0.4	30.7	40.6	6.5	42.3	42.9	11.5	8.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	13.0	5.3	3.1	11.2	5.8	2.6	29.2	31.2	19.6	19.9	22.2	5.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.1

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.4	0.3	0.3
Total Del/Veh (s)	17.4	6.2	3.3	18.1	8.9	3.6	33.0	27.4	20.0	26.9	25.0	15.6

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	13.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.1	0.1
Total Del/Veh (s)	4.3	1.2	1.0	3.8	0.4	0.1	16.0	9.4	4.0	12.8	11.3	4.4

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.6

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	3.0	0.1	0.4	0.1	4.8	6.1	0.5

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	328.1

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)		0.5	3.8	0.2	0.0	0.0	0.3	0.2	0.2	0.1		0.1
Total Del/Veh (s)		7.8	1.9	7.8	3.2	1.7	32.7	30.8	9.0	50.4		4.8

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	8.3

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	10.0	4.0	2.5	9.5	4.5	2.0	28.3	25.8	10.5	25.9	20.0	5.5

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	6.5

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
Total Del/Veh (s)	9.1	3.4	2.1	10.4	4.6	1.6	26.5	24.2	10.0	26.4	27.9	11.5

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.2	0.2	0.1
Total Del/Veh (s)	3.5	0.9	0.6	2.4	0.6	0.1	8.3	9.2	3.4	9.3	8.9	3.9

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.4

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	2.1	0.1	0.2	0.1	3.3	0.2

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	193.3

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	All
Denied Del/Veh (s)	0.1	0.6	3.5	0.1	0.0	0.0	0.2	0.1	0.3	0.1	0.3
Total Del/Veh (s)	7.6	10.8	2.9	8.9	2.7	0.7	31.0	24.9	13.3	48.3	10.3

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	9.1	4.2	3.1	10.4	3.8	1.8	31.6	27.2	14.0	22.3	30.2	6.7

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	5.7

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.3	0.3	0.3
Total Del/Veh (s)	13.5	5.4	2.8	14.1	6.7	2.2	22.2	23.8	13.4	25.0	25.9	13.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	10.1

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
Total Del/Veh (s)	4.4	1.4	0.6	4.3	0.8	0.2	12.4	13.5	3.9	13.7	14.4	5.5

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.1

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.2	0.0
Total Del/Veh (s)	2.1	0.2	0.2	0.0	4.1	3.7	0.3

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	225.5

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Road Diet (3-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	267	45	499	260	2	14	3	293	7	7	6
Future Volume (veh/h)	0	267	45	499	260	2	14	3	293	7	7	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1826	1826	1826	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	0	376	63	648	338	3	17	4	349	10	10	8
Peak Hour Factor	0.71	0.71	0.71	0.77	0.77	0.77	0.84	0.84	0.84	0.71	0.71	0.71
Percent Heavy Veh, %	9	9	9	5	5	5	9	9	9	6	6	6
Cap, veh/h	687	234	39	707	287	3	137	32	669	18	18	14
Arrive On Green	0.00	0.16	0.16	0.58	0.26	0.26	0.10	0.10	0.10	0.03	0.03	0.03
Sat Flow, veh/h	1682	1474	247	1739	1807	16	1374	323	1490	604	604	483
Grp Volume(v), veh/h	0	0	439	648	0	341	21	0	349	28	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	1721	1739	0	1823	1698	0	1490	1690	0	0
Q Serve(g_s), s	0.0	0.0	11.1	18.1	0.0	11.1	0.8	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	11.1	18.1	0.0	11.1	0.8	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.14	1.00		0.01	0.81		1.00	0.36		0.29
Lane Grp Cap(c), veh/h	687	0	273	707	0	289	170	0	669	51	0	0
V/C Ratio(X)	0.00	0.00	1.61	0.92	0.00	1.18	0.12	0.00	0.52	0.55	0.00	0.00
Avail Cap(c_a), veh/h	687	0	273	707	0	289	201	0	696	193	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.69	0.00	0.69	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	29.5	12.0	0.0	25.7	28.7	0.0	13.9	33.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	290.2	12.6	0.0	103.0	0.3	0.0	0.6	9.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	26.4	7.2	0.0	12.2	0.3	0.0	3.8	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	319.7	24.6	0.0	128.7	29.0	0.0	14.6	42.6	0.0	0.0
LnGrp LOS	A	A	F	C	A	F	C	A	B	D	A	A
Approach Vol, veh/h		439			989			370				28
Approach Delay, s/veh		319.7			60.5			15.4				42.6
Approach LOS		F			E			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.2	18.0		12.7	31.2	18.0		8.1				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	17.1	11.1		8.3	17.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	20.1	13.1		2.8	0.0	13.1		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	113.4
HCM 6th LOS	F

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

2022 Road Diet (3-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Volume (veh/h)	35	487	45	9	576	11	128	5	2	2	3	57
Future Volume (veh/h)	35	487	45	9	576	11	128	5	2	2	3	57
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1826	1826	1826	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	44	616	57	11	711	14	188	7	3	3	5	95
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.68	0.68	0.68	0.60	0.60	0.60
Percent Heavy Veh, %	8	8	8	5	5	5	1	1	1	2	2	2
Cap, veh/h	565	1072	99	599	1192	23	333	9	4	55	19	251
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	691	1604	148	743	1784	35	1377	51	22	14	111	1487
Grp Volume(v), veh/h	44	0	673	11	0	725	198	0	0	103	0	0
Grp Sat Flow(s),veh/h/ln	691	0	1752	743	0	1819	1450	0	0	1612	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	4.0	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.02	0.95		0.02	0.03		0.92
Lane Grp Cap(c), veh/h	565	0	1171	599	0	1216	345	0	0	325	0	0
V/C Ratio(X)	0.08	0.00	0.57	0.02	0.00	0.60	0.57	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	565	0	1171	599	0	1216	577	0	0	603	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.00	0.81	0.73	0.00	0.73	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.6	0.0	0.0	25.9	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.7	0.0	0.0	1.6	1.5	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	0.0	0.0	0.5	3.2	0.0	0.0	1.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.2	0.0	1.7	0.0	0.0	1.6	29.1	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		717			736			198			103	
Approach Delay, s/veh		1.6			1.6			29.1			26.4	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.3		17.7		52.3		17.7				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		24.1		34.5		24.1				
Max Q Clear Time (g_c+1), s		2.0		6.0		2.0		10.9				
Green Ext Time (p_c), s		0.9		0.5		0.9		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				6.1								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

2022 Road Diet (3-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	326	80	92	416	23	42	87	64	31	136	138
Future Volume (veh/h)	85	326	80	92	416	23	42	87	64	31	136	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1781	1781	1781	1885	1885	1885
Adj Flow Rate, veh/h	115	441	108	116	527	29	65	134	98	48	209	212
Peak Hour Factor	0.74	0.74	0.74	0.79	0.79	0.79	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	9	9	9	7	7	7	8	8	8	1	1	1
Cap, veh/h	337	701	172	523	865	48	127	232	146	92	260	244
Arrive On Green	1.00	1.00	1.00	0.51	0.51	0.51	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	804	1367	335	820	1686	93	205	734	463	113	824	773
Grp Volume(v), veh/h	115	0	549	116	0	556	297	0	0	469	0	0
Grp Sat Flow(s),veh/h/ln	804	0	1702	820	0	1778	1402	0	0	1711	0	0
Q Serve(g_s), s	6.0	0.0	0.0	5.6	0.0	15.5	0.0	0.0	0.0	5.7	0.0	0.0
Cycle Q Clear(g_c), s	21.5	0.0	0.0	5.6	0.0	15.5	12.1	0.0	0.0	17.8	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.05	0.22		0.33	0.10		0.45
Lane Grp Cap(c), veh/h	337	0	873	523	0	912	505	0	0	597	0	0
V/C Ratio(X)	0.34	0.00	0.63	0.22	0.00	0.61	0.59	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	337	0	873	523	0	912	673	0	0	793	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.72	0.00	0.72	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.6	0.0	0.0	9.7	0.0	12.1	20.2	0.0	0.0	22.4	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	2.5	1.0	0.0	3.0	1.1	0.0	0.0	3.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.6	1.0	0.0	6.1	4.1	0.0	0.0	7.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	0.0	2.5	10.6	0.0	15.1	21.3	0.0	0.0	26.2	0.0	0.0
LnGrp LOS	A	A	A	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h		664			672			297			469	
Approach Delay, s/veh		3.2			14.3			21.3			26.2	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.4		28.6		41.4		28.6				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		27.5		30.5		27.5		30.5				
Max Q Clear Time (g_c+1), s		23.5		14.1		17.5		19.8				
Green Ext Time (p_c), s		0.5		1.9		0.7		2.3				

Intersection Summary

HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

2022 Road Diet (3-Lanes)
AM Peak Hour

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	37	332	52	92	488	10	3	9	66	7	10	40
Future Vol, veh/h	37	332	52	92	488	10	3	9	66	7	10	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	12	12	12	8	8	8	0	0	0	0	0	0
Mvmt Flow	47	420	66	121	642	13	5	15	106	12	17	67

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	655	0	0	486	0	0	1480	1444	453	1499	1471	649
Stage 1	-	-	-	-	-	-	547	547	-	891	891	-
Stage 2	-	-	-	-	-	-	933	897	-	608	580	-
Critical Hdwy	4.22	-	-	4.18	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.308	-	-	2.272	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	886	-	-	1046	-	-	105	133	611	102	128	473
Stage 1	-	-	-	-	-	-	525	521	-	340	363	-
Stage 2	-	-	-	-	-	-	322	361	-	486	503	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	886	-	-	1046	-	-	70	111	611	67	107	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	111	-	67	107	-
Stage 1	-	-	-	-	-	-	497	493	-	322	321	-
Stage 2	-	-	-	-	-	-	232	319	-	369	476	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1.4			22			37.7		
HCM LOS							C			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	336	886	-	-	1046	-	-	202
HCM Lane V/C Ratio	0.374	0.053	-	-	0.116	-	-	0.47
HCM Control Delay (s)	22	9.3	-	-	8.9	-	-	37.7
HCM Lane LOS	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	1.7	0.2	-	-	0.4	-	-	2.3

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	387	564	6	1	26
Future Vol, veh/h	18	387	564	6	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	77	77	60	60
Heavy Vehicles, %	12	12	6	6	33	33
Mvmt Flow	22	466	732	8	2	43

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	740	0	-	0	1246 736
Stage 1	-	-	-	-	736 -
Stage 2	-	-	-	-	510 -
Critical Hdwy	4.22	-	-	-	6.73 6.53
Critical Hdwy Stg 1	-	-	-	-	5.73 -
Critical Hdwy Stg 2	-	-	-	-	5.73 -
Follow-up Hdwy	2.308	-	-	-	3.797 3.597
Pot Cap-1 Maneuver	823	-	-	-	166 372
Stage 1	-	-	-	-	422 -
Stage 2	-	-	-	-	544 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	823	-	-	-	162 372
Mov Cap-2 Maneuver	-	-	-	-	285 -
Stage 1	-	-	-	-	411 -
Stage 2	-	-	-	-	544 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	823	-	-	-	368
HCM Lane V/C Ratio	0.026	-	-	-	0.122
HCM Control Delay (s)	9.5	-	-	-	16.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Road Diet (3-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	161	40	349	203	1	45	6	454	1	1	2
Future Volume (veh/h)	1	161	40	349	203	1	45	6	454	1	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1752	1752	1752	1767	1767	1767	1900	1900	1900
Adj Flow Rate, veh/h	1	175	43	375	218	1	51	7	516	2	2	3
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88	0.60	0.60	0.60
Percent Heavy Veh, %	16	16	16	10	10	10	9	9	9	0	0	0
Cap, veh/h	665	239	59	682	324	1	160	22	617	5	5	7
Arrive On Green	0.30	0.19	0.19	0.30	0.19	0.19	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1584	1286	316	1668	1742	8	1488	204	1497	497	497	746
Grp Volume(v), veh/h	1	0	218	375	0	219	58	0	516	7	0	0
Grp Sat Flow(s),veh/h/ln	1584	0	1602	1668	0	1750	1692	0	1497	1741	0	0
Q Serve(g_s), s	0.0	0.0	8.3	4.4	0.0	7.6	2.1	0.0	0.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	8.3	4.4	0.0	7.6	2.1	0.0	0.3	0.3	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.00	0.88		1.00	0.29		0.43
Lane Grp Cap(c), veh/h	665	0	298	682	0	326	182	0	617	16	0	0
V/C Ratio(X)	0.00	0.00	0.73	0.55	0.00	0.67	0.32	0.00	0.84	0.44	0.00	0.00
Avail Cap(c_a), veh/h	665	0	298	682	0	326	216	0	647	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.93	0.00	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	24.9	15.9	0.0	24.6	26.8	0.0	17.1	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	14.6	0.9	0.0	9.9	1.0	0.0	9.0	18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.2	3.9	0.0	3.8	0.8	0.0	7.5	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	0.0	39.6	16.8	0.0	34.5	27.8	0.0	26.1	50.0	0.0	0.0
LnGrp LOS	B	A	D	B	A	C	C	A	C	D	A	A
Approach Vol, veh/h		219			594			574				7
Approach Delay, s/veh		39.4			23.3			26.3				50.0
Approach LOS		D			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	19.0		12.7	26.7	19.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	11.1	12.1		8.3	11.1	12.1		8.0				
Max Q Clear Time (g_c+I1), s	6.4	10.3		4.1	2.0	9.6		2.3				
Green Ext Time (p_c), s	0.6	0.1		1.0	0.0	0.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

2022 Road Diet (3-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	513	64	13	424	14	90	9	8	6	9	39
Future Volume (veh/h)	39	513	64	13	424	14	90	9	8	6	9	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1781	1781	1781	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	45	590	74	14	446	15	118	12	11	8	11	49
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.76	0.76	0.76	0.80	0.80	0.80
Percent Heavy Veh, %	9	9	9	8	8	8	2	2	2	0	0	0
Cap, veh/h	725	1077	135	624	1199	40	258	17	15	74	47	152
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	878	1538	193	734	1713	58	1256	134	118	95	378	1221
Grp Volume(v), veh/h	45	0	664	14	0	461	141	0	0	68	0	0
Grp Sat Flow(s),veh/h/ln	878	0	1731	734	0	1771	1508	0	0	1695	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	2.4	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.03	0.84		0.08	0.12		0.72
Lane Grp Cap(c), veh/h	725	0	1212	624	0	1239	290	0	0	273	0	0
V/C Ratio(X)	0.06	0.00	0.55	0.02	0.00	0.37	0.49	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	725	0	1212	624	0	1239	610	0	0	646	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.00	0.81	0.96	0.00	0.96	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.2	0.0	0.0	26.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.1	0.0	0.8	1.3	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.5	0.0	0.0	0.3	2.1	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.1	0.0	1.4	0.1	0.0	0.8	28.5	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		709			475			141			68	
Approach Delay, s/veh		1.4			0.8			28.5			26.4	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.0		14.0		51.0		14.0				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		30.5		23.1		30.5		23.1				
Max Q Clear Time (g_c+1), s		2.0		4.4		2.0		7.7				
Green Ext Time (p_c), s		0.9		0.3		0.5		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				5.1								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

2022 Road Diet (3-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	376	46	35	316	22	33	34	22	20	39	102
Future Volume (veh/h)	105	376	46	35	316	22	33	34	22	20	39	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1900	1900	1900	1811	1811	1811
Adj Flow Rate, veh/h	118	422	52	37	333	23	39	40	26	22	43	112
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91
Percent Heavy Veh, %	9	9	9	7	7	7	0	0	0	6	6	6
Cap, veh/h	667	977	120	696	1065	74	144	132	66	79	71	153
Arrive On Green	1.00	1.00	1.00	0.66	0.66	0.66	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	968	1474	182	883	1608	111	443	865	431	112	467	998
Grp Volume(v), veh/h	118	0	474	37	0	356	105	0	0	177	0	0
Grp Sat Flow(s),veh/h/ln	968	0	1656	883	0	1719	1739	0	0	1578	0	0
Q Serve(g_s), s	1.3	0.0	0.0	1.0	0.0	5.7	0.0	0.0	0.0	2.8	0.0	0.0
Cycle Q Clear(g_c), s	7.0	0.0	0.0	1.0	0.0	5.7	3.4	0.0	0.0	6.9	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.06	0.37		0.25	0.12		0.63
Lane Grp Cap(c), veh/h	667	0	1097	696	0	1139	342	0	0	304	0	0
V/C Ratio(X)	0.18	0.00	0.43	0.05	0.00	0.31	0.31	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	667	0	1097	696	0	1139	732	0	0	698	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.00	0.81	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.5	0.0	0.0	3.9	0.0	4.7	24.8	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.0	0.1	0.0	0.7	0.5	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	0.2	0.0	1.7	1.5	0.0	0.0	2.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.9	0.0	1.0	4.0	0.0	5.4	25.3	0.0	0.0	28.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		592		393		105		177				
Approach Delay, s/veh		1.0		5.3		25.3		28.0				
Approach LOS		A		A		C		C				
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.6		16.4		48.6		16.4				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		26.5		26.5		26.5		26.5				
Max Q Clear Time (g_c+I1), s		9.0		5.4		7.7		8.9				
Green Ext Time (p_c), s		0.6		0.5		0.4		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				8.1								
HCM 6th LOS				A								

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

2022 Road Diet (3-Lanes)
MD Peak Hour

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	32	372	14	18	338	7	6	4	18	11	7	29
Future Vol, veh/h	32	372	14	18	338	7	6	4	18	11	7	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	11	11	11	9	9	9	0	0	0	0	0	0
Mvmt Flow	41	471	18	24	445	9	10	6	29	18	12	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	454	0	0	489	0	0	1090	1064	481	1079	1069	450
Stage 1	-	-	-	-	-	-	562	562	-	498	498	-
Stage 2	-	-	-	-	-	-	528	502	-	581	571	-
Critical Hdwy	4.21	-	-	4.19	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.299	-	-	2.281	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1061	-	-	1039	-	-	194	225	589	198	223	613
Stage 1	-	-	-	-	-	-	515	513	-	558	548	-
Stage 2	-	-	-	-	-	-	538	545	-	503	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1061	-	-	1039	-	-	163	211	588	175	209	613
Mov Cap-2 Maneuver	-	-	-	-	-	-	163	211	-	175	209	-
Stage 1	-	-	-	-	-	-	495	493	-	536	535	-
Stage 2	-	-	-	-	-	-	474	532	-	453	488	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.4			17.9			19.4		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	324	1061	-	-	1039	-	-	327
HCM Lane V/C Ratio	0.139	0.038	-	-	0.023	-	-	0.24
HCM Control Delay (s)	17.9	8.5	-	-	8.5	-	-	19.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.9

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↗		↘	
Traffic Vol, veh/h	2	399	359	1	0	4
Future Vol, veh/h	2	399	359	1	0	4
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	95	95	60	60
Heavy Vehicles, %	11	11	9	9	0	0
Mvmt Flow	2	475	378	1	0	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	380	0	-	0	859 380
Stage 1	-	-	-	-	380 -
Stage 2	-	-	-	-	479 -
Critical Hdwy	4.21	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.299	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1131	-	-	-	329 671
Stage 1	-	-	-	-	696 -
Stage 2	-	-	-	-	627 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1130	-	-	-	328 670
Mov Cap-2 Maneuver	-	-	-	-	449 -
Stage 1	-	-	-	-	694 -
Stage 2	-	-	-	-	626 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1130	-	-	-	670
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	8.2	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Road Diet (3-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	296	51	394	225	3	43	4	545	4	0	0
Future Volume (veh/h)	1	296	51	394	225	3	43	4	545	4	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	348	60	433	247	3	51	5	649	7	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.84	0.84	0.84	0.60	0.60	0.60
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	0	0	0
Cap, veh/h	663	254	44	637	310	4	205	20	667	17	0	0
Arrive On Green	0.30	0.17	0.17	0.10	0.06	0.06	0.13	0.13	0.13	0.01	0.00	0.00
Sat Flow, veh/h	1711	1488	257	1753	1814	22	1603	157	1560	1809	0	0
Grp Volume(v), veh/h	1	0	408	433	0	250	56	0	649	7	0	0
Grp Sat Flow(s),veh/h/ln	1711	0	1745	1753	0	1836	1761	0	1560	1810	0	0
Q Serve(g_s), s	0.0	0.0	11.1	11.3	0.0	8.7	1.9	0.0	7.0	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	11.1	11.3	0.0	8.7	1.9	0.0	7.0	0.3	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.01	0.91		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	663	0	298	637	0	314	225	0	667	17	0	0
V/C Ratio(X)	0.00	0.00	1.37	0.68	0.00	0.80	0.25	0.00	0.97	0.42	0.00	0.00
Avail Cap(c_a), veh/h	663	0	298	637	0	314	225	0	667	223	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.90	0.00	0.90	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.3	0.0	27.0	24.1	0.0	29.6	25.5	0.0	18.2	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	186.2	2.6	0.0	17.1	0.6	0.0	28.0	16.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	19.7	7.5	0.0	5.6	0.8	0.0	13.2	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	0.0	213.2	26.8	0.0	46.7	26.1	0.0	46.2	48.3	0.0	0.0
LnGrp LOS	B	A	F	C	A	D	C	A	D	D	A	A
Approach Vol, veh/h		409			683			705				7
Approach Delay, s/veh		212.7			34.1			44.6				48.3
Approach LOS		F			C			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	18.0		14.0	26.4	18.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	12.1	11.1		8.3	12.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	13.3	13.1		9.0	2.0	10.7		2.3				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	78.7
HCM 6th LOS	E

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

2022 Road Diet (3-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	713	78	3	519	20	73	4	7	6	6	30
Future Volume (veh/h)	54	713	78	3	519	20	73	4	7	6	6	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1841	1841	1841	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	58	767	84	3	564	22	78	4	7	7	7	34
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	0	0	0
Cap, veh/h	707	1192	131	573	1277	50	229	12	12	76	35	115
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	821	1642	180	637	1759	69	1273	121	119	124	357	1166
Grp Volume(v), veh/h	58	0	851	3	0	586	89	0	0	48	0	0
Grp Sat Flow(s),veh/h/ln	821	0	1822	637	0	1828	1513	0	0	1647	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.04	0.88		0.08	0.15		0.71
Lane Grp Cap(c), veh/h	707	0	1323	573	0	1327	253	0	0	226	0	0
V/C Ratio(X)	0.08	0.00	0.64	0.01	0.00	0.44	0.35	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	707	0	1323	573	0	1327	527	0	0	538	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.65	0.00	0.65	0.91	0.00	0.91	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.8	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.0	0.0	1.0	0.8	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.0	0.0	0.4	1.3	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.1	0.0	1.6	0.0	0.0	1.0	28.7	0.0	0.0	27.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		909			589			89				48
Approach Delay, s/veh		1.5			1.0			28.7				27.7
Approach LOS		A			A			C				C
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.7		12.3		52.7		12.3				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		19.1		34.5		19.1				
Max Q Clear Time (g_c+1), s		2.0		3.7		2.0		5.4				
Green Ext Time (p_c), s		1.2		0.1		0.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				3.5								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

2022 Road Diet (3-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	525	46	37	380	21	29	70	61	32	76	133
Future Volume (veh/h)	155	525	46	37	380	21	29	70	61	32	76	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	174	590	52	40	413	23	40	96	84	42	99	173
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.73	0.73	0.73	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	3	3	3
Cap, veh/h	536	940	83	567	986	55	109	195	147	95	137	207
Arrive On Green	1.00	1.00	1.00	0.59	0.59	0.59	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	943	1606	142	779	1685	94	190	848	641	140	594	901
Grp Volume(v), veh/h	174	0	642	40	0	436	220	0	0	314	0	0
Grp Sat Flow(s),veh/h/ln	943	0	1747	779	0	1779	1679	0	0	1635	0	0
Q Serve(g_s), s	4.0	0.0	0.0	1.5	0.0	8.8	0.0	0.0	0.0	4.4	0.0	0.0
Cycle Q Clear(g_c), s	12.8	0.0	0.0	1.5	0.0	8.8	7.3	0.0	0.0	11.7	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.18		0.38	0.13		0.55
Lane Grp Cap(c), veh/h	536	0	1023	567	0	1041	451	0	0	439	0	0
V/C Ratio(X)	0.32	0.00	0.63	0.07	0.00	0.42	0.49	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	536	0	1023	567	0	1041	633	0	0	620	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.00	0.73	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.5	0.0	0.0	5.9	0.0	7.4	22.1	0.0	0.0	23.7	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	2.1	0.2	0.0	1.2	0.8	0.0	0.0	2.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.2	0.0	3.0	2.9	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	2.6	0.0	2.1	6.1	0.0	8.6	22.9	0.0	0.0	26.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		816			476			220			314	
Approach Delay, s/veh		2.2			8.4			22.9			26.0	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.6		21.4		43.6		21.4				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		30.5		22.5		30.5		22.5				
Max Q Clear Time (g_c+I1), s		14.8		9.3		10.8		13.7				
Green Ext Time (p_c), s		0.9		1.1		0.5		1.2				

Intersection Summary

HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

2022 Road Diet (3-Lanes)
PM Peak Hour

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	53	537	28	36	391	19	7	14	40	11	19	40
Future Vol, veh/h	53	537	28	36	391	19	7	14	40	11	19	40
Conflicting Peds, #/hr	5	0	0	0	0	5	4	0	2	2	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	87	87	87	76	76	76	66	66	66
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	0	0	0
Mvmt Flow	62	624	33	41	449	22	9	18	53	17	29	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	476	0	0	657	0	0	1356	1323	643	1349	1328	469
Stage 1	-	-	-	-	-	-	765	765	-	547	547	-
Stage 2	-	-	-	-	-	-	591	558	-	802	781	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1081	-	-	926	-	-	128	158	477	129	157	598
Stage 1	-	-	-	-	-	-	399	415	-	525	521	-
Stage 2	-	-	-	-	-	-	497	515	-	381	408	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1076	-	-	926	-	-	89	142	476	95	141	593
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	142	-	95	141	-
Stage 1	-	-	-	-	-	-	376	391	-	492	495	-
Stage 2	-	-	-	-	-	-	400	490	-	304	384	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.7			28.4			35.7		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	233	1076	-	-	926	-	-	220
HCM Lane V/C Ratio	0.344	0.057	-	-	0.045	-	-	0.482
HCM Control Delay (s)	28.4	8.5	-	-	9.1	-	-	35.7
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	1.5	0.2	-	-	0.1	-	-	2.4

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	586	443	2	1	3
Future Vol, veh/h	2	586	443	2	1	3
Conflicting Peds, #/hr	5	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	90	90	60	60
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	2	681	492	2	2	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	499	0	-	0	1183 498
Stage 1	-	-	-	-	498 -
Stage 2	-	-	-	-	685 -
Critical Hdwy	4.13	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.227	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1060	-	-	-	211 576
Stage 1	-	-	-	-	615 -
Stage 2	-	-	-	-	504 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1055	-	-	-	208 573
Mov Cap-2 Maneuver	-	-	-	-	345 -
Stage 1	-	-	-	-	611 -
Stage 2	-	-	-	-	501 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1055	-	-	-	492
HCM Lane V/C Ratio	0.002	-	-	-	0.014
HCM Control Delay (s)	8.4	-	-	-	12.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.2	0.1	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	12.8	8.8	13.1	3.7	2.3	34.9	41.0	8.9	34.2	40.2	7.3	10.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.3	0.3	0.1
Total Del/Veh (s)	16.3	7.5	6.3	16.7	7.6	6.1	28.9	31.2	17.4	36.1	26.9	10.2

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	10.1

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0	0.1	0.3	0.2	0.3	0.3	0.3	0.3
Total Del/Veh (s)	41.3	10.5	6.9	38.7	12.9	9.6	29.6	24.0	14.1	28.8	25.7	19.5

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	18.4

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.1
Total Del/Veh (s)	5.1	1.9	1.4	4.3	1.1	0.7	8.1	15.0	5.2	12.1	13.0	6.8

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.4

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.7	0.2	0.3
Total Del/Veh (s)	4.4	0.6	3.1	3.5	5.3	2.2

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	427.7

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)		0.2	0.2	0.1	0.0	0.0	0.2	0.3	0.2	0.1	0.1	0.1
Total Del/Veh (s)		10.9	6.2	8.2	3.8	1.7	32.7	29.7	11.6	47.0	39.9	5.3

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	9.9

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.2	0.1
Total Del/Veh (s)	10.5	6.8	5.2	12.6	5.9	3.5	29.2	32.9	12.2	33.1	28.6	7.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.6

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2
Total Del/Veh (s)	10.6	4.9	3.7	13.2	5.7	3.4	24.8	23.9	11.4	24.6	25.7	11.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	8.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.9	1.2	0.8	4.2	0.7	0.5	9.5	8.8	4.8	9.5	8.6	4.5

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	1.6

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)		0.0	0.3	0.8	0.1	0.2
Total Del/Veh (s)		0.6	1.9	2.8	2.9	1.2

Total Zone Performance

Denied Del/Veh (s)			0.3			
Total Del/Veh (s)			224.4			

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	All
Denied Del/Veh (s)	0.1	0.3	0.3	0.0	0.0	0.0	0.2	0.5	0.3	0.1	0.2
Total Del/Veh (s)	12.7	14.6	10.7	9.6	3.1	1.8	34.7	32.1	26.3	40.4	16.2

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.2	0.1	0.1
Total Del/Veh (s)	10.8	7.3	5.4	16.9	4.9	4.5	28.1	29.4	13.9	26.8	19.4	7.4

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	7.7

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.2	0.2	0.2
Total Del/Veh (s)	19.5	9.0	6.6	20.2	8.7	5.8	22.0	24.6	14.7	26.9	27.2	15.9

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	12.9

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.2	0.1	0.1
Total Del/Veh (s)	5.0	2.0	1.3	5.9	1.1	0.8	15.5	13.2	7.4	15.4	14.0	6.2

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.8

5: W. Chicago St. & Middle School Drive Performance by movement























Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.4	0.8	0.1	0.1	0.2
Total Del/Veh (s)	3.4	0.9	2.2	2.0	14.7	4.3	1.5

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	503.1

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Road Diet (3-Lanes) w/ IMP
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	267	45	499	260	2	14	3	293	7	7	6
Future Volume (veh/h)	0	267	45	499	260	2	14	3	293	7	7	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1826	1826	1826	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	0	376	63	648	338	3	17	4	349	10	10	8
Peak Hour Factor	0.71	0.71	0.71	0.77	0.77	0.77	0.84	0.84	0.84	0.71	0.71	0.71
Percent Heavy Veh, %	9	9	9	5	5	5	9	9	9	6	6	6
Cap, veh/h	457	378	319	700	778	659	120	28	656	17	17	14
Arrive On Green	0.00	0.21	0.21	0.59	0.71	0.71	0.09	0.09	0.09	0.03	0.03	0.03
Sat Flow, veh/h	1682	1767	1494	1739	1826	1546	1374	323	1489	603	603	483
Grp Volume(v), veh/h	0	376	63	648	338	3	21	0	349	28	0	0
Grp Sat Flow(s),veh/h/ln	1682	1767	1494	1739	1826	1546	1698	0	1489	1689	0	0
Q Serve(g_s), s	0.0	17.0	2.8	21.7	6.2	0.0	0.9	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	17.0	2.8	21.7	6.2	0.0	0.9	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.81		1.00	0.36		0.29
Lane Grp Cap(c), veh/h	457	378	319	700	778	659	149	0	656	49	0	0
V/C Ratio(X)	0.00	1.00	0.20	0.93	0.43	0.00	0.14	0.00	0.53	0.57	0.00	0.00
Avail Cap(c_a), veh/h	457	378	319	700	778	659	176	0	680	106	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	31.4	25.8	13.7	7.5	6.6	33.7	0.0	16.4	38.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	45.3	1.4	14.8	1.3	0.0	0.4	0.0	0.7	10.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.5	1.0	8.5	2.1	0.0	0.4	0.0	4.6	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	76.7	27.2	28.5	8.8	6.6	34.2	0.0	17.2	48.5	0.0	0.0
LnGrp LOS	A	E	C	C	A	A	C	A	B	D	A	A
Approach Vol, veh/h		439			989			370				28
Approach Delay, s/veh		69.6			21.7			18.1				48.5
Approach LOS		E			C			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.0	24.0		12.7	18.0	41.0		8.3				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	24.1	17.1		8.3	7.1	34.1		5.0				
Max Q Clear Time (g_c+I1), s	23.7	19.0		2.9	0.0	8.2		3.3				
Green Ext Time (p_c), s	0.1	0.0		0.7	0.0	0.3		0.0				

Intersection Summary

HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Road Diet (3-Lanes) w/ IMP
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗		↕	
Traffic Volume (veh/h)	1	161	40	349	203	1	45	6	454	1	1	2
Future Volume (veh/h)	1	161	40	349	203	1	45	6	454	1	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1752	1752	1752	1767	1767	1767	1900	1900	1900
Adj Flow Rate, veh/h	1	175	43	375	218	1	51	7	516	2	2	3
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88	0.60	0.60	0.60
Percent Heavy Veh, %	16	16	16	10	10	10	9	9	9	0	0	0
Cap, veh/h	666	310	260	717	326	275	160	22	617	5	5	7
Arrive On Green	0.30	0.19	0.19	0.30	0.19	0.19	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1584	1663	1394	1668	1752	1475	1488	204	1497	497	497	746
Grp Volume(v), veh/h	1	175	43	375	218	1	58	0	516	7	0	0
Grp Sat Flow(s),veh/h/ln	1584	1663	1394	1668	1752	1475	1692	0	1497	1741	0	0
Q Serve(g_s), s	0.0	6.2	1.7	2.6	7.5	0.0	2.1	0.0	0.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.2	1.7	2.6	7.5	0.0	2.1	0.0	0.3	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.88		1.00	0.29		0.43
Lane Grp Cap(c), veh/h	666	310	260	717	326	275	182	0	617	16	0	0
V/C Ratio(X)	0.00	0.57	0.17	0.52	0.67	0.00	0.32	0.00	0.84	0.44	0.00	0.00
Avail Cap(c_a), veh/h	666	310	260	717	326	275	216	0	647	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.7	24.1	22.2	15.1	24.6	21.5	26.8	0.0	17.1	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.3	1.4	0.6	9.7	0.0	1.0	0.0	9.0	18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.8	0.6	3.8	3.8	0.0	0.8	0.0	7.5	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.7	31.3	23.6	15.8	34.3	21.6	27.8	0.0	26.1	50.0	0.0	0.0
LnGrp LOS	B	C	C	B	C	C	C	A	C	D	A	A
Approach Vol, veh/h		219			594			574				7
Approach Delay, s/veh		29.7			22.6			26.3				50.0
Approach LOS		C			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	19.0		12.7	26.7	19.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	11.1	12.1		8.3	11.1	12.1		8.0				
Max Q Clear Time (g_c+I1), s	4.6	8.2		4.1	2.0	9.5		2.3				
Green Ext Time (p_c), s	0.7	0.1		1.0	0.0	0.1		0.0				

Intersection Summary























HCM 6th Ctrl Delay	25.4
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

2022 Road Diet (3-Lanes) w/ IMP
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	296	51	394	225	3	43	4	545	4	0	0
Future Volume (veh/h)	1	296	51	394	225	3	43	4	545	4	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	348	60	433	247	3	51	5	560	7	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.84	0.84	0.84	0.60	0.60	0.60
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	0	0	0
Cap, veh/h	568	387	324	648	634	534	160	16	641	16	0	0
Arrive On Green	0.18	0.22	0.22	0.52	0.57	0.57	0.10	0.10	0.10	0.01	0.00	0.00
Sat Flow, veh/h	1711	1796	1501	1753	1841	1552	1603	157	1560	1809	0	0
Grp Volume(v), veh/h	1	348	60	433	247	3	56	0	560	7	0	0
Grp Sat Flow(s),veh/h/ln	1711	1796	1501	1753	1841	1552	1761	0	1560	1810	0	0
Q Serve(g_s), s	0.0	13.2	2.3	7.2	5.1	0.1	2.1	0.0	1.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.2	2.3	7.2	5.1	0.1	2.1	0.0	1.3	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.91		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	568	387	324	648	634	534	176	0	641	16	0	0
V/C Ratio(X)	0.00	0.90	0.19	0.67	0.39	0.01	0.32	0.00	0.87	0.43	0.00	0.00
Avail Cap(c_a), veh/h	568	387	324	648	634	534	209	0	670	129	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	26.7	22.4	12.5	10.8	9.8	29.3	0.0	18.9	34.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	26.1	1.3	2.4	1.6	0.0	1.0	0.0	11.9	16.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.9	0.9	3.9	2.0	0.0	0.9	0.0	9.4	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.0	52.8	23.7	14.9	12.5	9.8	30.3	0.0	30.9	51.0	0.0	0.0
LnGrp LOS	B	D	C	B	B	A	C	A	C	D	A	A
Approach Vol, veh/h		409			683			616				7
Approach Delay, s/veh		48.4			14.0			30.8				51.0
Approach LOS		D			B			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.7	22.0		12.7	19.7	31.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	16.1	15.1		8.3	7.1	24.1		5.0				
Max Q Clear Time (g_c+I1), s	9.2	15.2		4.1	2.0	7.1		2.3				
Green Ext Time (p_c), s	0.9	0.0		1.1	0.0	0.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				28.4								
HCM 6th LOS				C								

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.7	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	12.4	4.0	11.9	3.7	1.9	41.0	27.4	8.6	48.4	52.9	20.4	10.3

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	11.2	5.9	4.3	9.9	5.1	2.6	35.9	51.0	24.4	30.8	30.4	9.9

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.9

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.3	0.3	0.2
Total Del/Veh (s)	18.0	9.0	6.2	24.8	10.9	6.8	66.1	58.2	56.6	43.5	42.6	33.0

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	23.1

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	0.2
Total Del/Veh (s)	4.7	1.8	1.4	3.8	0.7	0.4	13.1	13.4	5.3	13.5	13.2	6.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.2

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.4	0.1	0.1	0.3
Total Del/Veh (s)	4.7	0.5	0.6	0.2	6.7	5.4	0.8

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	447.2

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)		0.2	0.2	0.2	0.0	0.0	0.2	0.3	0.2		0.1	0.1
Total Del/Veh (s)		10.2	3.1	8.2	3.2	3.2	32.6	40.8	10.1		41.0	3.8

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	9.1

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.1	0.2
Total Del/Veh (s)	11.9	6.6	4.2	12.5	5.6	3.9	28.6	30.7	15.4	24.6	29.1	6.8

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.5

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.1	0.2
Total Del/Veh (s)	9.9	4.4	3.0	10.0	5.5	2.8	26.8	25.7	10.6	26.3	28.5	11.6

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.4

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	3.7	1.2	1.0	3.1	0.4	0.1	8.8	12.1	4.7	9.1	9.1	5.2

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.4

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.4	0.1	0.1
Total Del/Veh (s)	1.6	0.6	0.2	0.1	3.2	0.5

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	212.2

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	All
Denied Del/Veh (s)		0.3	0.3	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.2
Total Del/Veh (s)		15.0	5.2	12.0	3.9	2.1	35.8	40.9	20.9	55.1	15.0

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	12.2	6.5	5.5	19.9	5.2	3.8	31.7	29.7	21.7	28.3	31.6	8.1

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2	0.3	0.3	0.3
Total Del/Veh (s)	24.1	13.8	12.3	19.9	8.3	6.3	28.8	27.2	17.7	26.2	27.1	16.6

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	15.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	5.1	2.1	1.8	4.6	1.2	0.3	13.7	17.2	7.8	14.9	15.7	7.4

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.9

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.1		0.1	0.2
Total Del/Veh (s)	2.4	0.8	0.3	0.0		3.4	0.6

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	461.7

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↖	↗		↕	
Traffic Volume (veh/h)	0	282	48	528	273	2	15	3	311	7	7	6
Future Volume (veh/h)	0	282	48	528	273	2	15	3	311	7	7	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.98		0.96	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1826	1826	1826	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	0	397	68	686	355	3	18	4	370	10	10	8
Peak Hour Factor	0.71	0.71	0.71	0.77	0.77	0.77	0.84	0.84	0.84	0.71	0.71	0.71
Percent Heavy Veh, %	9	9	9	5	5	5	9	9	9	6	6	6
Cap, veh/h	687	450	76	724	290	237	139	31	669	18	18	14
Arrive On Green	0.00	0.16	0.16	0.46	0.21	0.21	0.10	0.10	0.10	0.03	0.03	0.03
Sat Flow, veh/h	1682	2841	481	1739	1826	1492	1389	309	1490	604	604	483
Grp Volume(v), veh/h	0	233	232	686	355	3	22	0	370	28	0	0
Grp Sat Flow(s),veh/h/ln	1682	1678	1644	1739	1826	1492	1697	0	1490	1691	0	0
Q Serve(g_s), s	0.0	9.5	9.7	21.0	11.1	0.1	0.8	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.5	9.7	21.0	11.1	0.1	0.8	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.29	1.00		1.00	0.82		1.00	0.36		0.29
Lane Grp Cap(c), veh/h	687	266	261	724	290	237	170	0	669	51	0	0
V/C Ratio(X)	0.00	0.87	0.89	0.95	1.23	0.01	0.13	0.00	0.55	0.55	0.00	0.00
Avail Cap(c_a), veh/h	687	266	261	724	290	237	201	0	696	193	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	28.8	28.9	16.1	27.6	23.3	28.7	0.0	14.2	33.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	30.6	33.6	20.4	126.9	0.1	0.3	0.0	0.9	9.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.8	5.9	11.2	14.5	0.0	0.3	0.0	4.1	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	59.3	62.4	36.5	154.5	23.4	29.1	0.0	15.1	42.5	0.0	0.0
LnGrp LOS	A	E	E	D	F	C	C	A	B	D	A	A
Approach Vol, veh/h		465			1044			392				28
Approach Delay, s/veh		60.9			76.6			15.9				42.5
Approach LOS		E			E			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.2	18.0		12.7	31.2	18.0		8.1				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	17.1	11.1		8.3	17.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	23.0	11.7		2.8	0.0	13.1		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	60.0
HCM 6th LOS	E

Notes

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

HCM 6th Signalized Intersection Summary
2: West Street/Water Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	515	48	10	608	12	135	5	2	2	3	60
Future Volume (veh/h)	37	515	48	10	608	12	135	5	2	2	3	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1781	1781	1781	1826	1826	1826	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	47	652	61	12	751	15	199	7	3	3	5	100
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.68	0.68	0.68	0.60	0.60	0.60
Percent Heavy Veh, %	8	8	8	5	5	5	1	1	1	2	2	2
Cap, veh/h	540	2050	192	573	2281	46	343	9	4	55	19	268
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	666	3126	292	717	3478	69	1340	47	20	13	105	1479
Grp Volume(v), veh/h	47	353	360	12	375	391	209	0	0	108	0	0
Grp Sat Flow(s),veh/h/ln	666	1692	1726	717	1735	1813	1408	0	0	1597	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	9.7	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.04	0.95		0.01	0.03		0.93
Lane Grp Cap(c), veh/h	540	1110	1132	573	1138	1189	356	0	0	342	0	0
V/C Ratio(X)	0.09	0.32	0.32	0.02	0.33	0.33	0.59	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	540	1110	1132	573	1138	1189	568	0	0	598	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.94	0.94	0.94	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.2	0.0	0.0	25.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.7	0.7	0.1	0.7	0.7	1.5	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.0	0.2	0.2	3.4	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.3	0.7	0.7	0.1	0.7	0.7	28.7	0.0	0.0	25.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		760			778			209			108	
Approach Delay, s/veh		0.6			0.7			28.7			25.7	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.4		18.6		51.4		18.6				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		24.1		34.5		24.1				
Max Q Clear Time (g_c+1), s		2.0		6.2		2.0		11.7				
Green Ext Time (p_c), s		0.9		0.5		0.8		1.0				
Intersection Summary												
HCM 6th Ctrl Delay				5.3								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	344	85	97	440	24	44	92	68	33	144	146
Future Volume (veh/h)	90	344	85	97	440	24	44	92	68	33	144	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1781	1781	1781	1885	1885	1885
Adj Flow Rate, veh/h	122	465	115	123	557	30	68	142	105	51	222	225
Peak Hour Factor	0.74	0.74	0.74	0.79	0.79	0.79	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	9	9	9	7	7	7	8	8	8	1	1	1
Cap, veh/h	410	1323	325	497	1635	88	129	239	153	95	273	256
Arrive On Green	0.99	0.99	0.99	0.50	0.50	0.50	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	780	2664	654	797	3291	177	200	721	460	115	823	773
Grp Volume(v), veh/h	122	292	288	123	288	299	315	0	0	498	0	0
Grp Sat Flow(s),veh/h/ln	780	1678	1639	797	1706	1762	1381	0	0	1710	0	0
Q Serve(g_s), s	3.4	0.1	0.1	6.5	7.2	7.2	0.0	0.0	0.0	5.9	0.0	0.0
Cycle Q Clear(g_c), s	10.6	0.1	0.1	6.6	7.2	7.2	13.0	0.0	0.0	19.0	0.0	0.0
Prop In Lane	1.00		0.40	1.00		0.10	0.22		0.33	0.10		0.45
Lane Grp Cap(c), veh/h	410	834	814	497	848	875	521	0	0	624	0	0
V/C Ratio(X)	0.30	0.35	0.35	0.25	0.34	0.34	0.60	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	410	834	814	497	848	875	666	0	0	794	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.3	0.1	0.1	10.6	10.7	10.7	19.6	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	1.7	1.1	1.1	1.2	1.1	1.1	1.1	0.0	0.0	4.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	0.3	1.2	2.7	2.7	4.3	0.0	0.0	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.0	1.2	1.2	11.7	11.8	11.7	20.7	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	C	A	A	C	A	A
Approach Vol, veh/h		702			710			315			498	
Approach Delay, s/veh		1.5			11.7			20.7			26.4	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.3		29.7		40.3		29.7				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		27.5		30.5		27.5		30.5				
Max Q Clear Time (g_c+1), s		12.6		15.0		9.2		21.0				
Green Ext Time (p_c), s		0.8		1.9		0.8		2.3				
Intersection Summary												
HCM 6th Ctrl Delay				13.1								
HCM 6th LOS				B								

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
AM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕			↕			↕	
Traffic Vol, veh/h	39	350	56	97	515	11	3	10	70	7	11	43
Future Vol, veh/h	39	350	56	97	515	11	3	10	70	7	11	43
Conflicting Peds, #/hr	8	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	12	12	12	8	8	8	0	0	0	0	0	0
Mvmt Flow	49	443	71	128	678	14	5	16	113	12	18	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	700	0	0	514	0	0	1181	1533	257	1277	1561	354
Stage 1	-	-	-	-	-	-	577	577	-	949	949	-
Stage 2	-	-	-	-	-	-	604	956	-	328	612	-
Critical Hdwy	4.34	-	-	4.26	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.32	-	-	2.28	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	829	-	-	1007	-	-	148	118	748	126	113	648
Stage 1	-	-	-	-	-	-	474	505	-	284	342	-
Stage 2	-	-	-	-	-	-	457	339	-	664	487	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	823	-	-	1007	-	-	96	96	748	80	92	643
Mov Cap-2 Maneuver	-	-	-	-	-	-	96	96	-	80	92	-
Stage 1	-	-	-	-	-	-	446	475	-	265	296	-
Stage 2	-	-	-	-	-	-	332	294	-	512	458	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1.4			20.7			34		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	362	823	-	-	1007	-	-	223
HCM Lane V/C Ratio	0.37	0.06	-	-	0.127	-	-	0.456
HCM Control Delay (s)	20.7	9.7	-	-	9.1	-	-	34
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.7	0.2	-	-	0.4	-	-	2.2

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	408	596	6	1	27
Future Vol, veh/h	19	408	596	6	1	27
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	83	83	77	77	60	60
Heavy Vehicles, %	12	12	6	6	54	54
Mvmt Flow	23	492	774	8	2	45

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	782	0	-	0	1070 778
Stage 1	-	-	-	-	778 -
Stage 2	-	-	-	-	292 -
Critical Hdwy	4.28	-	-	-	7.41 7.01
Critical Hdwy Stg 1	-	-	-	-	6.21 -
Critical Hdwy Stg 2	-	-	-	-	6.61 -
Follow-up Hdwy	2.314	-	-	-	4.013 3.813
Pot Cap-1 Maneuver	781	-	-	-	170 305
Stage 1	-	-	-	-	351 -
Stage 2	-	-	-	-	615 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	781	-	-	-	165 305
Mov Cap-2 Maneuver	-	-	-	-	266 -
Stage 1	-	-	-	-	341 -
Stage 2	-	-	-	-	615 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	19
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	781	-	-	-	303
HCM Lane V/C Ratio	0.029	-	-	-	0.154
HCM Control Delay (s)	9.7	-	-	-	19
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗		↖	↗		↕	
Traffic Volume (veh/h)	1	171	42	368	214	1	48	6	480	1	1	2
Future Volume (veh/h)	1	171	42	368	214	1	48	6	480	1	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1752	1752	1752	1767	1767	1767	1900	1900	1900
Adj Flow Rate, veh/h	1	186	46	396	230	1	55	7	545	2	2	3
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88	0.60	0.60	0.60
Percent Heavy Veh, %	16	16	16	10	10	10	9	9	9	0	0	0
Cap, veh/h	658	469	113	746	326	274	162	21	617	5	5	7
Arrive On Green	0.30	0.19	0.19	0.30	0.19	0.19	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1584	2517	606	1668	1752	1473	1501	191	1490	496	496	745
Grp Volume(v), veh/h	1	115	117	396	230	1	62	0	545	7	0	0
Grp Sat Flow(s),veh/h/ln	1584	1580	1544	1668	1752	1473	1692	0	1490	1738	0	0
Q Serve(g_s), s	0.0	4.1	4.3	1.9	8.0	0.0	2.2	0.0	2.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	4.1	4.3	1.9	8.0	0.0	2.2	0.0	2.1	0.3	0.0	0.0
Prop In Lane	1.00		0.39	1.00		1.00	0.89		1.00	0.29		0.43
Lane Grp Cap(c), veh/h	658	294	287	746	326	274	182	0	617	16	0	0
V/C Ratio(X)	0.00	0.39	0.41	0.53	0.71	0.00	0.34	0.00	0.88	0.44	0.00	0.00
Avail Cap(c_a), veh/h	658	294	287	746	326	274	216	0	646	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.99	0.99	0.99	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	23.2	23.3	14.6	24.8	21.5	26.9	0.0	17.6	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.9	4.2	0.7	12.0	0.0	1.1	0.0	13.3	18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.8	4.0	4.2	0.0	0.9	0.0	8.7	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	27.1	27.5	15.3	36.8	21.6	28.0	0.0	31.0	50.1	0.0	0.0
LnGrp LOS	B	C	C	B	D	C	C	A	C	D	A	A
Approach Vol, veh/h		233			627			607				7
Approach Delay, s/veh		27.2			23.2			30.7				50.1
Approach LOS		C			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	19.0		12.7	26.7	19.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	11.1	12.1		8.3	11.1	12.1		8.0				
Max Q Clear Time (g_c+I1), s	3.9	6.3		4.2	2.0	10.0		2.3				
Green Ext Time (p_c), s	0.8	0.1		1.0	0.0	0.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	27.0
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	543	68	14	447	15	95	10	8	6	10	41
Future Volume (veh/h)	41	543	68	14	447	15	95	10	8	6	10	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1767	1767	1767	1781	1781	1781	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	47	624	78	15	471	16	125	13	11	8	12	51
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.76	0.76	0.76	0.80	0.80	0.80
Percent Heavy Veh, %	9	9	9	8	8	8	2	2	2	0	0	0
Cap, veh/h	706	2083	260	603	2317	79	266	18	15	73	51	159
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	858	3002	375	709	3340	113	1257	136	111	89	388	1217
Grp Volume(v), veh/h	47	348	354	15	238	249	149	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	858	1678	1699	709	1692	1761	1504	0	0	1695	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	2.5	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.06	0.84		0.07	0.11		0.72
Lane Grp Cap(c), veh/h	706	1164	1178	603	1174	1221	299	0	0	284	0	0
V/C Ratio(X)	0.07	0.30	0.30	0.02	0.20	0.20	0.50	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	706	1164	1178	603	1174	1221	610	0	0	647	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	0.99	0.99	0.99	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.0	0.0	0.0	25.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.1	0.4	0.4	1.3	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.2	0.2	0.0	0.1	0.1	2.2	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.1	0.5	0.5	0.1	0.4	0.4	28.3	0.0	0.0	26.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		749		502			149			71		
Approach Delay, s/veh		0.5		0.4			28.3			26.1		
Approach LOS		A		A			C			C		
Timer - Assigned Phs		2		4			6			8		
Phs Duration (G+Y+Rc), s		50.6		14.4			50.6			14.4		
Change Period (Y+Rc), s		5.5		5.9			5.5			5.9		
Max Green Setting (Gmax), s		30.5		23.1			30.5			23.1		
Max Q Clear Time (g_c+I1), s		2.0		4.5			2.0			8.0		
Green Ext Time (p_c), s		0.8		0.3			0.5			0.7		

Intersection Summary

HCM 6th Ctrl Delay	4.5
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	397	49	38	333	23	35	36	23	21	41	108
Future Volume (veh/h)	111	397	49	38	333	23	35	36	23	21	41	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1900	1900	1900	1811	1811	1811
Adj Flow Rate, veh/h	125	446	55	40	351	24	42	43	27	23	45	119
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91
Percent Heavy Veh, %	9	9	9	7	7	7	0	0	0	6	6	6
Cap, veh/h	697	1937	238	678	2101	143	146	134	65	80	72	157
Arrive On Green	1.00	1.00	1.00	0.66	0.66	0.66	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	951	2941	361	861	3189	217	446	856	413	112	463	1005
Grp Volume(v), veh/h	125	254	247	40	187	188	112	0	0	187	0	0
Grp Sat Flow(s),veh/h/ln	951	1678	1624	861	1706	1700	1715	0	0	1580	0	0
Q Serve(g_s), s	0.7	0.0	0.0	1.1	2.7	2.8	0.0	0.0	0.0	3.1	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	0.0	1.1	2.7	2.8	3.6	0.0	0.0	7.3	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.13	0.37		0.24	0.12		0.64
Lane Grp Cap(c), veh/h	697	1106	1070	678	1124	1120	345	0	0	310	0	0
V/C Ratio(X)	0.18	0.23	0.23	0.06	0.17	0.17	0.32	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	697	1106	1070	678	1124	1120	728	0	0	699	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	4.0	4.3	4.3	24.6	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.5	0.5	0.2	0.3	0.3	0.5	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.2	0.8	0.8	1.6	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.7	0.5	0.5	4.1	4.6	4.6	25.2	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		626			415			112			187	
Approach Delay, s/veh		0.5			4.5			25.2			28.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.3		16.7		48.3		16.7				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		26.5		26.5		26.5		26.5				
Max Q Clear Time (g_c+I1), s		5.4		5.6		4.8		9.3				
Green Ext Time (p_c), s		0.6		0.6		0.4		0.9				

Intersection Summary

HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
MD Peak Hour

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗			↕↗			↕↗	↕↗
Traffic Vol, veh/h	34	392	15	19	357	7	6	4	19	12	7	31
Future Vol, veh/h	34	392	15	19	357	7	6	4	19	12	7	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	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	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	11	11	11	9	9	9	0	0	0	0	0	0
Mvmt Flow	43	496	19	25	470	9	10	6	31	20	12	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	479	0	0	515	0	0	883	1121	259	863	1126	240
Stage 1	-	-	-	-	-	-	592	592	-	525	525	-
Stage 2	-	-	-	-	-	-	291	529	-	338	601	-
Critical Hdwy	4.32	-	-	4.28	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.31	-	-	2.29	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1019	-	-	999	-	-	243	208	746	252	207	767
Stage 1	-	-	-	-	-	-	465	497	-	509	533	-
Stage 2	-	-	-	-	-	-	698	530	-	656	493	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1019	-	-	999	-	-	205	194	745	224	193	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	194	-	224	193	-
Stage 1	-	-	-	-	-	-	445	476	-	488	520	-
Stage 2	-	-	-	-	-	-	620	517	-	594	472	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.4			15.6			17		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	385	1019	-	-	999	-	-	384
HCM Lane V/C Ratio	0.121	0.042	-	-	0.025	-	-	0.217
HCM Control Delay (s)	15.6	8.7	-	-	8.7	-	-	17
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.8

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	421	379	1	0	4
Future Vol, veh/h	2	421	379	1	0	4
Conflicting Peds, #/hr	1	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	84	84	95	95	60	60
Heavy Vehicles, %	11	11	9	9	0	0
Mvmt Flow	2	501	399	1	0	7






















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	401	0	-	0	656
Stage 1	-	-	-	-	401
Stage 2	-	-	-	-	255
Critical Hdwy	4.265	-	-	-	6.6
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	2.3045	-	-	-	3.5
Pot Cap-1 Maneuver	1101	-	-	-	418
Stage 1	-	-	-	-	681
Stage 2	-	-	-	-	770
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1100	-	-	-	416
Mov Cap-2 Maneuver	-	-	-	-	517
Stage 1	-	-	-	-	679
Stage 2	-	-	-	-	769

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1100	-	-	-	652
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	8.3	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	313	54	416	237	3	45	4	576	4	0	0
Future Volume (veh/h)	1	313	54	416	237	3	45	4	576	4	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	368	64	457	260	3	54	5	686	7	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.84	0.84	0.84	0.60	0.60	0.60
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	0	0	0
Cap, veh/h	657	497	86	683	314	266	206	19	667	17	0	0
Arrive On Green	0.30	0.17	0.17	0.10	0.06	0.06	0.13	0.13	0.13	0.01	0.00	0.00
Sat Flow, veh/h	1711	2911	502	1753	1841	1560	1611	149	1560	1809	0	0
Grp Volume(v), veh/h	1	214	218	457	260	3	59	0	686	7	0	0
Grp Sat Flow(s),veh/h/ln	1711	1706	1706	1753	1841	1560	1760	0	1560	1810	0	0
Q Serve(g_s), s	0.0	7.7	7.9	10.3	9.1	0.1	2.0	0.0	8.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	7.7	7.9	10.3	9.1	0.1	2.0	0.0	8.3	0.3	0.0	0.0
Prop In Lane	1.00		0.29	1.00		1.00	0.92		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	657	291	291	683	314	266	225	0	667	17	0	0
V/C Ratio(X)	0.00	0.74	0.75	0.67	0.83	0.01	0.26	0.00	1.03	0.42	0.00	0.00
Avail Cap(c_a), veh/h	657	291	291	683	314	266	225	0	667	223	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.98	0.98	0.98	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	25.6	25.6	23.2	29.7	25.5	25.6	0.0	18.6	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	15.2	16.0	2.5	21.1	0.1	0.6	0.0	42.2	16.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	4.2	7.7	6.1	0.0	0.8	0.0	16.2	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	40.8	41.6	25.7	50.8	25.6	26.2	0.0	60.8	48.3	0.0	0.0
LnGrp LOS	B	D	D	C	D	C	C	A	F	D	A	A
Approach Vol, veh/h		433			720			745				7
Approach Delay, s/veh		41.1			34.8			58.0				48.3
Approach LOS		D			C			E				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	18.0		14.0	26.4	18.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	12.1	11.1		8.3	12.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	12.3	9.9		10.3	2.0	11.1		2.3				
Green Ext Time (p_c), s	0.0	0.1		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				45.4								
HCM 6th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

Horizon 2042 Existing Geometry (5-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	754	82	3	547	22	77	4	7	6	6	32
Future Volume (veh/h)	57	754	82	3	547	22	77	4	7	6	6	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1841	1841	1841	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	61	811	88	3	595	24	82	4	7	7	7	37
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	0	0	0
Cap, veh/h	688	2324	252	544	2483	100	232	10	11	74	33	118
Arrive On Green	0.96	0.96	0.96	1.00	1.00	1.00	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	796	3206	348	609	3426	138	1282	104	113	115	333	1185
Grp Volume(v), veh/h	61	446	453	3	303	316	93	0	0	51	0	0
Grp Sat Flow(s),veh/h/ln	796	1763	1791	609	1749	1815	1499	0	0	1633	0	0
Q Serve(g_s), s	0.2	0.9	0.9	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.9	0.9	0.9	0.0	0.0	3.6	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.19	1.00		0.08	0.88		0.08	0.14		0.73
Lane Grp Cap(c), veh/h	688	1278	1298	544	1268	1316	254	0	0	226	0	0
V/C Ratio(X)	0.09	0.35	0.35	0.01	0.24	0.24	0.37	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	688	1278	1298	544	1268	1316	522	0	0	532	0	0
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.98	0.98	0.98	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.3	0.3	0.3	0.0	0.0	0.0	27.9	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.6	0.5	0.0	0.4	0.4	0.9	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	0.3	0.0	0.2	0.2	1.4	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.5	0.9	0.9	0.0	0.4	0.4	28.8	0.0	0.0	27.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		960			622			93			51	
Approach Delay, s/veh		0.9			0.4			28.8			27.7	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.6		12.4		52.6		12.4				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		19.1		34.5		19.1				
Max Q Clear Time (g_c+1), s		2.9		3.9		2.9		5.6				
Green Ext Time (p_c), s		1.1		0.2		0.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				3.0								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary

Horizon 2042 Existing Geometry (5-Lanes)

3: Maume Street/Evans Street (M-99) & W. Chicago St.

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	555	49	40	400	22	31	74	65	34	80	141
Future Volume (veh/h)	163	555	49	40	400	22	31	74	65	34	80	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	183	624	55	43	435	24	42	101	89	44	104	183
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.73	0.73	0.73	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	3	3	3
Cap, veh/h	584	1846	162	545	1926	106	111	201	153	97	142	217
Arrive On Green	1.00	1.00	1.00	0.58	0.58	0.58	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	923	3202	282	753	3341	184	189	841	641	142	594	909
Grp Volume(v), veh/h	183	343	336	43	229	230	232	0	0	331	0	0
Grp Sat Flow(s),veh/h/ln	923	1763	1721	753	1763	1762	1671	0	0	1645	0	0
Q Serve(g_s), s	2.2	0.0	0.0	1.7	4.1	4.1	0.0	0.0	0.0	4.6	0.0	0.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	1.7	4.1	4.1	7.7	0.0	0.0	12.3	0.0	0.0
Prop In Lane	1.00		0.16	1.00		0.10	0.18		0.38	0.13		0.55
Lane Grp Cap(c), veh/h	584	1016	992	545	1016	1016	465	0	0	456	0	0
V/C Ratio(X)	0.31	0.34	0.34	0.08	0.23	0.23	0.50	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	584	1016	992	545	1016	1016	632	0	0	624	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.3	0.0	0.0	6.2	6.7	6.7	21.7	0.0	0.0	23.4	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.8	0.9	0.3	0.5	0.5	0.8	0.0	0.0	2.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.2	0.3	1.4	1.4	3.1	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.7	0.8	0.9	6.5	7.2	7.2	22.5	0.0	0.0	26.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		862			502			232			331	
Approach Delay, s/veh		1.0			7.2			22.5			26.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		43.0		22.0		43.0		22.0				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		30.5		22.5		30.5		22.5				
Max Q Clear Time (g_c+I1), s		8.3		9.7		6.1		14.3				
Green Ext Time (p_c), s		0.9		1.2		0.5		1.3				
Intersection Summary												
HCM 6th Ctrl Delay				9.5								
HCM 6th LOS				A								

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕↗		↵	↕↗			↕↗			↕↗	
Traffic Vol, veh/h	56	568	30	39	413	20	7	15	42	11	20	42
Future Vol, veh/h	56	568	30	39	413	20	7	15	42	11	20	42
Conflicting Peds, #/hr	5	0	0	0	0	5	4	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	87	87	87	76	76	76	66	66	66
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	0	0	0
Mvmt Flow	65	660	35	45	475	23	9	20	55	17	30	64

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	695	0	0	1155	1401	350	1054	1407	258
Stage 1	-	-	-	-	-	-	808	808	-	582	582	-
Stage 2	-	-	-	-	-	-	347	593	-	472	825	-
Critical Hdwy	4.16	-	-	4.16	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.23	-	-	2.23	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1051	-	-	890	-	-	154	141	652	183	140	747
Stage 1	-	-	-	-	-	-	345	397	-	471	502	-
Stage 2	-	-	-	-	-	-	648	497	-	547	390	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1046	-	-	890	-	-	105	125	651	134	124	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	125	-	134	124	-
Stage 1	-	-	-	-	-	-	324	372	-	439	474	-
Stage 2	-	-	-	-	-	-	524	469	-	444	366	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.8			25.9			31.6		
HCM LOS							D			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	255	1046	-	-	890	-	-	243
HCM Lane V/C Ratio	0.33	0.062	-	-	0.05	-	-	0.455
HCM Control Delay (s)	25.9	8.7	-	-	9.3	-	-	31.6
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.4	0.2	-	-	0.2	-	-	2.2

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	619	469	2	1	3
Future Vol, veh/h	2	619	469	2	1	3
Conflicting Peds, #/hr	5	0	0	5	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	86	86	90	90	60	60
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	2	720	521	2	2	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	528	0	-	0	891
Stage 1	-	-	-	-	527
Stage 2	-	-	-	-	364
Critical Hdwy	4.145	-	-	-	6.6
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	2.2285	-	-	-	3.5
Pot Cap-1 Maneuver	1031	-	-	-	300
Stage 1	-	-	-	-	596
Stage 2	-	-	-	-	679
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1026	-	-	-	296
Mov Cap-2 Maneuver	-	-	-	-	422
Stage 1	-	-	-	-	592
Stage 2	-	-	-	-	676

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1026	-	-	-	513
HCM Lane V/C Ratio	0.002	-	-	-	0.013
HCM Control Delay (s)	8.5	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.7	3.4	0.1	0.0	0.0	0.2	0.2	0.2	0.1	0.1	0.1	0.3
Total Del/Veh (s)	10.8	3.5	13.0	3.5	1.1	34.4	31.7	7.4	32.6	34.5	8.2	9.7

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.2	0.2	0.1
Total Del/Veh (s)	15.2	5.4	3.6	11.2	5.8	4.2	27.8	29.5	15.1	36.8	24.4	6.1

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.1

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.4	0.3	0.3
Total Del/Veh (s)	17.7	6.9	3.8	22.9	9.8	4.0	26.3	22.0	14.4	26.2	25.8	15.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	13.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.2	0.2	0.2
Total Del/Veh (s)	4.9	1.3	1.1	3.7	0.8	0.1	15.7	11.4	3.9	18.5	16.6	6.2

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.1

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	3.6	0.1	0.4	0.1	13.7	5.7	0.5

9000: W. Chicago St. & Dummy Node Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.1	0.0	0.0
Total Del/Veh (s)	0.6	0.2	0.4

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	260.3

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)		0.5	3.7	0.2	0.1	0.0	0.2	0.2	0.2		0.1	0.1
Total Del/Veh (s)		8.2	2.2	8.0	3.4	0.8	32.0	41.4	9.4		51.6	3.3

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	8.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	9.7	4.4	3.2	11.4	4.8	1.7	28.3	30.9	14.0	25.4	22.6	6.1

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.0

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.2	0.2
Total Del/Veh (s)	9.1	3.4	1.9	9.6	4.3	1.3	26.1	24.8	10.6	27.1	27.1	10.4

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.4

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.1
Total Del/Veh (s)	4.0	0.9	0.6	3.2	0.7	0.1	11.3	9.9	3.4	9.7	12.4	4.5

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.4

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Del/Veh (s)	2.7	0.1	0.2	0.1	3.9	0.2

9000: W. Chicago St. & Dummy Node Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.5	0.1	0.3

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	140.0

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	All
Denied Del/Veh (s)	0.1	0.6	3.6	0.0	0.0	0.0	0.2	0.5	0.3	0.1	0.3
Total Del/Veh (s)	4.5	10.9	3.4	9.5	3.0	1.0	31.5	33.4	12.9	45.2	10.4

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	10.7	4.7	3.2	15.0	4.0	1.6	29.8	34.5	15.3	25.4	30.4	6.8

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	6.1

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.3	0.2
Total Del/Veh (s)	13.7	5.7	2.9	17.7	6.6	2.6	27.2	23.5	14.0	26.0	25.1	13.7

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	10.2

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1
Total Del/Veh (s)	4.8	1.5	1.0	5.0	0.9	0.2	13.7	14.5	4.9	11.9	16.7	5.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.3

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	4.3	0.2	0.3	0.2	7.0	5.4	0.3

9000: W. Chicago St. & Dummy Node Performance by movement

Movement	EBT	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.8	0.2	0.5

Total Zone Performance

Denied Del/Veh (s)	0.4
Total Del/Veh (s)	170.8

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	282	48	528	273	2	15	3	311	7	7	6
Future Volume (veh/h)	0	282	48	528	273	2	15	3	311	7	7	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1826	1826	1826	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	0	397	68	686	355	3	18	4	370	10	10	8
Peak Hour Factor	0.71	0.71	0.71	0.77	0.77	0.77	0.84	0.84	0.84	0.71	0.71	0.71
Percent Heavy Veh, %	9	9	9	5	5	5	9	9	9	6	6	6
Cap, veh/h	687	233	40	707	287	2	139	31	669	18	18	14
Arrive On Green	0.00	0.16	0.16	0.46	0.21	0.21	0.10	0.10	0.10	0.03	0.03	0.03
Sat Flow, veh/h	1682	1469	252	1739	1808	15	1389	309	1490	604	604	483
Grp Volume(v), veh/h	0	0	465	686	0	358	22	0	370	28	0	0
Grp Sat Flow(s),veh/h/ln	1682	0	1720	1739	0	1823	1697	0	1490	1690	0	0
Q Serve(g_s), s	0.0	0.0	11.1	22.6	0.0	11.1	0.8	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	11.1	22.6	0.0	11.1	0.8	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.01	0.82		1.00	0.36		0.29
Lane Grp Cap(c), veh/h	687	0	273	707	0	289	170	0	669	51	0	0
V/C Ratio(X)	0.00	0.00	1.70	0.97	0.00	1.24	0.13	0.00	0.55	0.55	0.00	0.00
Avail Cap(c_a), veh/h	687	0	273	707	0	289	201	0	696	193	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.63	0.00	0.63	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	29.5	16.7	0.0	27.6	28.7	0.0	14.2	33.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	332.3	20.1	0.0	124.8	0.3	0.0	0.9	9.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	29.5	11.3	0.0	14.3	0.3	0.0	4.1	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	361.7	36.8	0.0	152.4	29.1	0.0	15.1	42.6	0.0	0.0
LnGrp LOS	A	A	F	D	A	F	C	A	B	D	A	A
Approach Vol, veh/h		465			1044			392				28
Approach Delay, s/veh		361.7			76.4			15.9				42.6
Approach LOS		F			E			B				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	31.2	18.0		12.7	31.2	18.0		8.1				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	17.1	11.1		8.3	17.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	24.6	13.1		2.8	0.0	13.1		3.1				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	132.4
HCM 6th LOS	F

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	515	48	10	608	12	135	5	2	2	3	60
Future Volume (veh/h)	37	515	48	10	608	12	135	5	2	2	3	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1781	1781	1781	1826	1826	1826	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	47	652	61	12	751	15	199	7	3	3	5	100
Peak Hour Factor	0.79	0.79	0.79	0.81	0.81	0.81	0.68	0.68	0.68	0.60	0.60	0.60
Percent Heavy Veh, %	8	8	8	5	5	5	1	1	1	2	2	2
Cap, veh/h	540	1053	99	573	1172	23	344	9	4	55	19	268
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	665	1602	150	716	1783	36	1354	48	20	13	106	1492
Grp Volume(v), veh/h	47	0	713	12	0	766	209	0	0	108	0	0
Grp Sat Flow(s),veh/h/ln	665	0	1752	716	0	1819	1423	0	0	1612	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	0.0	4.2	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.02	0.95		0.01	0.03		0.93
Lane Grp Cap(c), veh/h	540	0	1152	573	0	1196	356	0	0	342	0	0
V/C Ratio(X)	0.09	0.00	0.62	0.02	0.00	0.64	0.59	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	540	0	1152	573	0	1196	572	0	0	604	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.00	0.76	0.67	0.00	0.67	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.2	0.0	0.0	25.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.9	0.0	0.0	1.8	1.5	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.0	0.0	0.6	3.4	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.2	0.0	1.9	0.0	0.0	1.8	28.8	0.0	0.0	25.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		760			778			209			108	
Approach Delay, s/veh		1.8			1.8			28.8			25.8	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		51.5		18.5		51.5		18.5				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		24.1		34.5		24.1				
Max Q Clear Time (g_c+11), s		2.0		6.2		2.0		11.6				
Green Ext Time (p_c), s		1.0		0.5		0.9		1.0				

Intersection Summary

HCM 6th Ctrl Delay	6.2
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	344	85	97	440	24	44	92	68	33	144	146
Future Volume (veh/h)	90	344	85	97	440	24	44	92	68	33	144	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No		No		No		No
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1781	1781	1781	1885	1885	1885
Adj Flow Rate, veh/h	122	465	115	123	557	30	68	142	105	51	222	225
Peak Hour Factor	0.74	0.74	0.74	0.79	0.79	0.79	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	9	9	9	7	7	7	8	8	8	1	1	1
Cap, veh/h	298	678	168	494	839	45	129	239	153	95	273	256
Arrive On Green	0.99	0.99	0.99	0.50	0.50	0.50	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	781	1364	337	797	1688	91	200	721	460	115	824	774
Grp Volume(v), veh/h	122	0	580	123	0	587	315	0	0	498	0	0
Grp Sat Flow(s),veh/h/ln	781	0	1701	797	0	1779	1381	0	0	1713	0	0
Q Serve(g_s), s	8.0	0.0	0.4	6.5	0.0	17.3	0.0	0.0	0.0	5.9	0.0	0.0
Cycle Q Clear(g_c), s	25.3	0.0	0.4	6.9	0.0	17.3	13.1	0.0	0.0	18.9	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.05	0.22		0.33	0.10		0.45
Lane Grp Cap(c), veh/h	298	0	846	494	0	884	520	0	0	624	0	0
V/C Ratio(X)	0.41	0.00	0.69	0.25	0.00	0.66	0.61	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	298	0	846	494	0	884	666	0	0	795	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.00	0.66	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	0.1	10.7	0.0	13.2	19.6	0.0	0.0	21.9	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	3.0	1.2	0.0	3.9	1.1	0.0	0.0	4.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	1.2	0.0	7.0	4.3	0.0	0.0	0.0	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	3.1	11.9	0.0	17.1	20.7	0.0	0.0	26.4	0.0	0.0
LnGrp LOS	A	A	A	B	A	B	C	A	A	C	A	A
Approach Vol, veh/h		702			710			315			498	
Approach Delay, s/veh		4.2			16.2			20.7			26.4	
Approach LOS		A			B			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.3		29.7		40.3		29.7				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		27.5		30.5		27.5		30.5				
Max Q Clear Time (g_c+1), s		27.3		15.1		19.3		20.9				
Green Ext Time (p_c), s		0.0		1.9		0.7		2.3				

Intersection Summary

HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
AM Peak Hour

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	350	56	97	515	11	3	10	70	7	11	43
Future Vol, veh/h	39	350	56	97	515	11	3	10	70	7	11	43
Conflicting Peds, #/hr	8	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	12	12	12	8	8	8	0	0	0	0	0	0
Mvmt Flow	49	443	71	128	678	14	5	16	113	12	18	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	700	0	0	514	0	0	1563	1533	479	1590	1561	693
Stage 1	-	-	-	-	-	-	577	577	-	949	949	-
Stage 2	-	-	-	-	-	-	986	956	-	641	612	-
Critical Hdwy	4.22	-	-	4.18	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.308	-	-	2.272	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	852	-	-	1022	-	-	92	118	591	88	113	447
Stage 1	-	-	-	-	-	-	506	505	-	315	342	-
Stage 2	-	-	-	-	-	-	301	339	-	466	487	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	846	-	-	1022	-	-	57	97	591	54	92	444
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	97	-	54	92	-
Stage 1	-	-	-	-	-	-	477	476	-	295	297	-
Stage 2	-	-	-	-	-	-	207	294	-	343	459	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			1.4			26			50.2		
HCM LOS							D			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	303	846	-	-	1022	-	-	176
HCM Lane V/C Ratio	0.442	0.058	-	-	0.125	-	-	0.578
HCM Control Delay (s)	26	9.5	-	-	9	-	-	50.2
HCM Lane LOS	D	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	2.2	0.2	-	-	0.4	-	-	3.1

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	408	596	6	1	27
Future Vol, veh/h	19	408	596	6	1	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	77	77	60	60
Heavy Vehicles, %	12	12	6	6	33	33
Mvmt Flow	23	492	774	8	2	45

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	782	0	-	0	1316 778
Stage 1	-	-	-	-	778 -
Stage 2	-	-	-	-	538 -
Critical Hdwy	4.22	-	-	-	6.73 6.53
Critical Hdwy Stg 1	-	-	-	-	5.73 -
Critical Hdwy Stg 2	-	-	-	-	5.73 -
Follow-up Hdwy	2.308	-	-	-	3.797 3.597
Pot Cap-1 Maneuver	793	-	-	-	150 351
Stage 1	-	-	-	-	403 -
Stage 2	-	-	-	-	528 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	793	-	-	-	146 351
Mov Cap-2 Maneuver	-	-	-	-	270 -
Stage 1	-	-	-	-	391 -
Stage 2	-	-	-	-	528 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	793	-	-	-	347
HCM Lane V/C Ratio	0.029	-	-	-	0.134
HCM Control Delay (s)	9.7	-	-	-	17
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	171	42	368	214	1	48	6	480	1	1	2
Future Volume (veh/h)	1	171	42	368	214	1	48	6	480	1	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1752	1752	1752	1767	1767	1767	1900	1900	1900
Adj Flow Rate, veh/h	1	186	46	396	230	1	55	7	545	2	2	3
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88	0.60	0.60	0.60
Percent Heavy Veh, %	16	16	16	10	10	10	9	9	9	0	0	0
Cap, veh/h	657	239	59	671	324	1	162	21	617	5	5	7
Arrive On Green	0.30	0.19	0.19	0.30	0.19	0.19	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1584	1284	318	1668	1743	8	1501	191	1497	497	497	746
Grp Volume(v), veh/h	1	0	232	396	0	231	62	0	545	7	0	0
Grp Sat Flow(s),veh/h/ln	1584	0	1602	1668	0	1750	1692	0	1497	1741	0	0
Q Serve(g_s), s	0.0	0.0	9.0	5.8	0.0	8.0	2.2	0.0	2.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	9.0	5.8	0.0	8.0	2.2	0.0	2.1	0.3	0.0	0.0
Prop In Lane	1.00		0.20	1.00		0.00	0.89		1.00	0.29		0.43
Lane Grp Cap(c), veh/h	657	0	298	671	0	326	182	0	617	16	0	0
V/C Ratio(X)	0.00	0.00	0.78	0.59	0.00	0.71	0.34	0.00	0.88	0.44	0.00	0.00
Avail Cap(c_a), veh/h	657	0	298	671	0	326	216	0	647	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.92	0.00	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	0.0	25.2	16.3	0.0	24.8	26.9	0.0	17.6	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	17.9	1.3	0.0	11.4	1.1	0.0	13.2	18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.7	4.3	0.0	4.2	0.9	0.0	8.7	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	0.0	43.1	17.6	0.0	36.2	28.0	0.0	30.8	50.0	0.0	0.0
LnGrp LOS	B	A	D	B	A	D	C	A	C	D	A	A
Approach Vol, veh/h		233			627			607				7
Approach Delay, s/veh		43.0			24.4			30.5				50.0
Approach LOS		D			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	19.0		12.7	26.7	19.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	11.1	12.1		8.3	11.1	12.1		8.0				
Max Q Clear Time (g_c+I1), s	7.8	11.0		4.2	2.0	10.0		2.3				
Green Ext Time (p_c), s	0.5	0.0		1.0	0.0	0.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	543	68	14	447	15	95	10	8	6	10	41
Future Volume (veh/h)	41	543	68	14	447	15	95	10	8	6	10	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1781	1781	1781	1870	1870	1870	1900	1900	1900
Adj Flow Rate, veh/h	47	624	78	15	471	16	125	13	11	8	12	51
Peak Hour Factor	0.87	0.87	0.87	0.95	0.95	0.95	0.76	0.76	0.76	0.80	0.80	0.80
Percent Heavy Veh, %	9	9	9	8	8	8	2	2	2	0	0	0
Cap, veh/h	705	1068	133	602	1188	40	267	18	15	73	51	160
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	857	1539	192	708	1713	58	1261	136	111	89	390	1221
Grp Volume(v), veh/h	47	0	702	15	0	487	149	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	857	0	1731	708	0	1771	1508	0	0	1699	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0	2.5	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.03	0.84		0.07	0.11		0.72
Lane Grp Cap(c), veh/h	705	0	1201	602	0	1229	299	0	0	284	0	0
V/C Ratio(X)	0.07	0.00	0.58	0.02	0.00	0.40	0.50	0.00	0.00	0.25	0.00	0.00
Avail Cap(c_a), veh/h	705	0	1201	602	0	1229	611	0	0	649	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.00	0.80	0.95	0.00	0.95	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.0	0.0	0.0	25.6	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	1.7	0.1	0.0	0.9	1.3	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.0	0.0	0.3	2.3	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.1	0.0	1.7	0.1	0.0	0.9	28.3	0.0	0.0	26.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		749			502			149			71	
Approach Delay, s/veh		1.6			0.9			28.3			26.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		50.6		14.4		50.6		14.4				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		30.5		23.1		30.5		23.1				
Max Q Clear Time (g_c+I1), s		2.0		4.5		2.0		8.0				
Green Ext Time (p_c), s		0.9		0.3		0.6		0.7				

Intersection Summary

HCM 6th Ctrl Delay	5.2
HCM 6th LOS	A

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	397	49	38	333	23	35	36	23	21	41	108
Future Volume (veh/h)	111	397	49	38	333	23	35	36	23	21	41	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1796	1796	1796	1900	1900	1900	1811	1811	1811
Adj Flow Rate, veh/h	125	446	55	40	351	24	42	43	27	23	45	119
Peak Hour Factor	0.89	0.89	0.89	0.95	0.95	0.95	0.84	0.84	0.84	0.91	0.91	0.91
Percent Heavy Veh, %	9	9	9	7	7	7	0	0	0	6	6	6
Cap, veh/h	647	972	120	678	1060	73	146	134	65	80	72	158
Arrive On Green	1.00	1.00	1.00	0.66	0.66	0.66	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	951	1474	182	861	1609	110	447	856	414	112	464	1008
Grp Volume(v), veh/h	125	0	501	40	0	375	112	0	0	187	0	0
Grp Sat Flow(s),veh/h/ln	951	0	1656	861	0	1719	1716	0	0	1583	0	0
Q Serve(g_s), s	1.5	0.0	0.0	1.1	0.0	6.2	0.0	0.0	0.0	3.1	0.0	0.0
Cycle Q Clear(g_c), s	7.7	0.0	0.0	1.1	0.0	6.2	3.6	0.0	0.0	7.3	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.06	0.37		0.24	0.12		0.64
Lane Grp Cap(c), veh/h	647	0	1091	678	0	1133	344	0	0	310	0	0
V/C Ratio(X)	0.19	0.00	0.46	0.06	0.00	0.33	0.33	0.00	0.00	0.60	0.00	0.00
Avail Cap(c_a), veh/h	647	0	1091	678	0	1133	728	0	0	700	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	0.77	0.00	0.77	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.6	0.0	0.0	4.0	0.0	4.8	24.7	0.0	0.0	26.2	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	1.1	0.2	0.0	0.8	0.5	0.0	0.0	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.2	0.0	1.8	1.6	0.0	0.0	0.0	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1.1	0.0	1.1	4.1	0.0	5.6	25.2	0.0	0.0	28.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		626			415			112			187	
Approach Delay, s/veh		1.1			5.5			25.2			28.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		48.3		16.7		48.3		16.7				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		26.5		26.5		26.5		26.5				
Max Q Clear Time (g_c+1), s		9.7		5.6		8.2		9.3				
Green Ext Time (p_c), s		0.6		0.6		0.4		0.9				
Intersection Summary												
HCM 6th Ctrl Delay				8.2								
HCM 6th LOS				A								

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
MD Peak Hour

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	392	15	19	357	7	6	4	19	12	7	31
Future Vol, veh/h	34	392	15	19	357	7	6	4	19	12	7	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	76	76	76	62	62	62	60	60	60
Heavy Vehicles, %	11	11	11	9	9	9	0	0	0	0	0	0
Mvmt Flow	43	496	19	25	470	9	10	6	31	20	12	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	479	0	0	515	0	0	1149	1121	507	1136	1126	475
Stage 1	-	-	-	-	-	-	592	592	-	525	525	-
Stage 2	-	-	-	-	-	-	557	529	-	611	601	-
Critical Hdwy	4.21	-	-	4.19	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.299	-	-	2.281	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1038	-	-	1016	-	-	177	208	570	181	207	594
Stage 1	-	-	-	-	-	-	496	497	-	540	533	-
Stage 2	-	-	-	-	-	-	518	530	-	484	493	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1038	-	-	1016	-	-	147	194	569	159	194	594
Mov Cap-2 Maneuver	-	-	-	-	-	-	147	194	-	159	194	-
Stage 1	-	-	-	-	-	-	476	477	-	518	520	-
Stage 2	-	-	-	-	-	-	451	517	-	433	473	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.4			18.9			21.2		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	1038	-	-	1016	-	-	305
HCM Lane V/C Ratio	0.153	0.041	-	-	0.025	-	-	0.273
HCM Control Delay (s)	18.9	8.6	-	-	8.6	-	-	21.2
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	1.1

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	421	379	1	0	4
Future Vol, veh/h	2	421	379	1	0	4
Conflicting Peds, #/hr	1	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	95	95	60	60
Heavy Vehicles, %	11	11	9	9	0	0
Mvmt Flow	2	501	399	1	0	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	401	0	-	0	906
Stage 1	-	-	-	-	401
Stage 2	-	-	-	-	505
Critical Hdwy	4.21	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.299	-	-	-	3.5
Pot Cap-1 Maneuver	1111	-	-	-	309
Stage 1	-	-	-	-	681
Stage 2	-	-	-	-	610
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1110	-	-	-	308
Mov Cap-2 Maneuver	-	-	-	-	433
Stage 1	-	-	-	-	679
Stage 2	-	-	-	-	609

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1110	-	-	-	652
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	8.2	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗		↕	
Traffic Volume (veh/h)	1	313	54	416	237	3	45	4	576	4	0	0
Future Volume (veh/h)	1	313	54	416	237	3	45	4	576	4	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	368	64	457	260	3	54	5	686	7	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.84	0.84	0.84	0.60	0.60	0.60
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	0	0	0
Cap, veh/h	655	254	44	637	310	4	206	19	667	17	0	0
Arrive On Green	0.30	0.17	0.17	0.10	0.06	0.06	0.13	0.13	0.13	0.01	0.00	0.00
Sat Flow, veh/h	1711	1486	258	1753	1816	21	1611	149	1560	1809	0	0
Grp Volume(v), veh/h	1	0	432	457	0	263	59	0	686	7	0	0
Grp Sat Flow(s),veh/h/ln	1711	0	1744	1753	0	1837	1760	0	1560	1810	0	0
Q Serve(g_s), s	0.0	0.0	11.1	12.2	0.0	9.2	2.0	0.0	8.3	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	11.1	12.2	0.0	9.2	2.0	0.0	8.3	0.3	0.0	0.0
Prop In Lane	1.00		0.15	1.00		0.01	0.92		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	655	0	298	637	0	314	225	0	667	17	0	0
V/C Ratio(X)	0.00	0.00	1.45	0.72	0.00	0.84	0.26	0.00	1.03	0.42	0.00	0.00
Avail Cap(c_a), veh/h	655	0	298	637	0	314	225	0	667	223	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.88	0.00	0.88	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.6	0.0	27.0	24.5	0.0	29.8	25.6	0.0	18.6	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	220.5	3.4	0.0	20.5	0.6	0.0	42.2	16.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	22.6	8.1	0.0	6.1	0.8	0.0	16.2	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	247.5	27.9	0.0	50.2	26.2	0.0	60.8	48.3	0.0	0.0
LnGrp LOS	B	A	F	C	A	D	C	A	F	D	A	A
Approach Vol, veh/h		433			720			745				7
Approach Delay, s/veh		246.9			36.1			58.0				48.3
Approach LOS		F			D			E				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	18.0		14.0	26.4	18.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	12.1	11.1		8.3	12.1	11.1		8.0				
Max Q Clear Time (g_c+I1), s	14.2	13.1		10.3	2.0	11.2		2.3				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	92.6
HCM 6th LOS	F

Notes

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

HCM 6th Signalized Intersection Summary
 2: West Street/Water Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	754	82	3	547	22	77	4	7	6	6	32
Future Volume (veh/h)	57	754	82	3	547	22	77	4	7	6	6	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1841	1841	1841	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	61	811	88	3	595	24	82	4	7	7	7	37
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.94	0.94	0.94	0.87	0.87	0.87
Percent Heavy Veh, %	3	3	3	4	4	4	0	0	0	0	0	0
Cap, veh/h	688	1192	129	552	1273	51	233	10	11	75	34	119
Arrive On Green	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	796	1644	178	609	1757	71	1296	105	114	116	336	1196
Grp Volume(v), veh/h	61	0	899	3	0	619	93	0	0	51	0	0
Grp Sat Flow(s),veh/h/ln	796	0	1822	609	0	1827	1515	0	0	1649	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	1.9	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.04	0.88		0.08	0.14		0.73
Lane Grp Cap(c), veh/h	688	0	1321	552	0	1325	255	0	0	227	0	0
V/C Ratio(X)	0.09	0.00	0.68	0.01	0.00	0.47	0.36	0.00	0.00	0.22	0.00	0.00
Avail Cap(c_a), veh/h	688	0	1321	552	0	1325	527	0	0	537	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.00	0.59	0.89	0.00	0.89	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	27.8	0.0	0.0	27.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.7	0.0	0.0	1.1	0.9	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.0	0.0	0.4	1.4	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.2	0.0	1.7	0.0	0.0	1.1	28.7	0.0	0.0	27.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		960			622			93				51
Approach Delay, s/veh		1.6			1.1			28.7				27.7
Approach LOS		A			A			C				C
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.6		12.4		52.6		12.4				
Change Period (Y+Rc), s		5.5		5.9		5.5		5.9				
Max Green Setting (Gmax), s		34.5		19.1		34.5		19.1				
Max Q Clear Time (g_c+I1), s		2.0		3.9		2.0		5.6				
Green Ext Time (p_c), s		1.3		0.2		0.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				3.6								
HCM 6th LOS				A								

HCM 6th Signalized Intersection Summary
 3: Maumee Street/Evans Street (M-99) & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	555	49	40	400	22	31	74	65	34	80	141
Future Volume (veh/h)	163	555	49	40	400	22	31	74	65	34	80	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1885	1885	1885	1856	1856	1856
Adj Flow Rate, veh/h	183	624	55	43	435	24	42	101	89	44	104	183
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.73	0.73	0.73	0.77	0.77	0.77
Percent Heavy Veh, %	3	3	3	3	3	3	1	1	1	3	3	3
Cap, veh/h	506	924	81	544	970	54	111	201	153	96	142	217
Arrive On Green	1.00	1.00	1.00	0.58	0.58	0.58	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	923	1606	142	753	1686	93	189	838	639	141	591	905
Grp Volume(v), veh/h	183	0	679	43	0	459	232	0	0	331	0	0
Grp Sat Flow(s),veh/h/ln	923	0	1747	753	0	1779	1666	0	0	1637	0	0
Q Serve(g_s), s	5.0	0.0	0.0	1.7	0.0	9.6	0.0	0.0	0.0	4.6	0.0	0.0
Cycle Q Clear(g_c), s	14.6	0.0	0.0	1.7	0.0	9.6	7.7	0.0	0.0	12.3	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.05	0.18		0.38	0.13		0.55
Lane Grp Cap(c), veh/h	506	0	1006	544	0	1024	465	0	0	455	0	0
V/C Ratio(X)	0.36	0.00	0.68	0.08	0.00	0.45	0.50	0.00	0.00	0.73	0.00	0.00
Avail Cap(c_a), veh/h	506	0	1006	544	0	1024	631	0	0	621	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.68	0.00	0.68	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	1.9	0.0	0.0	6.2	0.0	7.9	21.7	0.0	0.0	23.4	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	2.5	0.3	0.0	1.4	0.8	0.0	0.0	2.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.7	0.3	0.0	3.3	3.1	0.0	0.0	4.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.2	0.0	2.5	6.5	0.0	9.3	22.5	0.0	0.0	26.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		862			502			232			331	
Approach Delay, s/veh		2.6			9.1			22.5			26.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		42.9		22.1		42.9		22.1				
Change Period (Y+Rc), s		5.5		6.5		5.5		6.5				
Max Green Setting (Gmax), s		30.5		22.5		30.5		22.5				
Max Q Clear Time (g_c+I1), s		16.6		9.7		11.6		14.3				
Green Ext Time (p_c), s		0.9		1.2		0.6		1.3				
Intersection Summary												
HCM 6th Ctrl Delay											10.7	
HCM 6th LOS											B	

HCM 6th TWSC
4: East Street/Wright Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes)
PM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	56	568	30	39	413	20	7	15	42	11	20	42
Future Vol, veh/h	56	568	30	39	413	20	7	15	42	11	20	42
Conflicting Peds, #/hr	5	0	0	0	0	5	4	0	2	2	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	500	-	-	500	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	87	87	87	76	76	76	66	66	66
Heavy Vehicles, %	3	3	3	3	3	3	0	0	0	0	0	0
Mvmt Flow	65	660	35	45	475	23	9	20	55	17	30	64

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	503	0	0	695	0	0	1436	1401	680	1429	1407	496
Stage 1	-	-	-	-	-	-	808	808	-	582	582	-
Stage 2	-	-	-	-	-	-	628	593	-	847	825	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1056	-	-	896	-	-	112	141	454	114	140	578
Stage 1	-	-	-	-	-	-	378	397	-	502	502	-
Stage 2	-	-	-	-	-	-	474	497	-	359	390	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1051	-	-	896	-	-	74	125	453	80	124	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	74	125	-	80	124	-
Stage 1	-	-	-	-	-	-	355	372	-	469	474	-
Stage 2	-	-	-	-	-	-	373	470	-	279	366	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.8			33.6			44.8		
HCM LOS							D			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	208	1051	-	-	896	-	-	196
HCM Lane V/C Ratio	0.405	0.062	-	-	0.05	-	-	0.564
HCM Control Delay (s)	33.6	8.7	-	-	9.2	-	-	44.8
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	1.8	0.2	-	-	0.2	-	-	3

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	619	469	2	1	3
Future Vol, veh/h	2	619	469	2	1	3
Conflicting Peds, #/hr	5	0	0	5	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	500	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	90	90	60	60
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	2	720	521	2	2	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	528	0	-	0	1251
Stage 1	-	-	-	-	527
Stage 2	-	-	-	-	724
Critical Hdwy	4.13	-	-	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	2.227	-	-	-	3.5
Pot Cap-1 Maneuver	1034	-	-	-	192
Stage 1	-	-	-	-	596
Stage 2	-	-	-	-	484
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1029	-	-	-	190
Mov Cap-2 Maneuver	-	-	-	-	328
Stage 1	-	-	-	-	592
Stage 2	-	-	-	-	482

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1029	-	-	-	472
HCM Lane V/C Ratio	0.002	-	-	-	0.014
HCM Control Delay (s)	8.5	-	-	-	12.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.3	0.1	0.0	0.0	0.2	0.3	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	16.4	11.7	14.9	3.7	2.6	37.8	41.7	10.6	45.3	43.8	9.4	12.7

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	20.4	9.1	6.8	21.3	8.1	7.7	29.1	27.1	28.0	41.7	29.3	9.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	11.0

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.7	0.3	0.0	0.0	0.3	0.2	0.3	0.3	0.3	0.3
Total Del/Veh (s)	61.6	15.1	12.3	86.1	17.4	16.1	33.5	30.5	20.3	27.0	25.7	18.9

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	25.4

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.2	0.0	0.3	0.1	0.1	0.1	0.2	0.1
Total Del/Veh (s)	7.2	2.0	1.7	4.9	5.3	3.3	33.2	19.0	10.4	24.5	19.1	13.8

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	5.1

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.5	0.6	0.3	0.1	0.3
Total Del/Veh (s)	4.5	0.6	7.0	9.8	11.2	9.4	4.5

Total Zone Performance

Denied Del/Veh (s)	0.5
Total Del/Veh (s)	563.6

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.2	0.2	0.2	0.0	0.0	0.3	0.2	0.2	0.1	0.1	0.1
Total Del/Veh (s)	8.6	11.6	7.6	8.1	3.7	3.6	32.4	31.8	13.1	34.8	30.5	6.3

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.2
Total Del/Veh (s)	10.5

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	10.7	8.1	5.6	19.5	5.8	5.7	27.9	33.5	13.1	25.8	26.6	9.0

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	9.4

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.2
Total Del/Veh (s)	10.2	5.0	3.4	14.4	5.9	4.3	25.2	27.6	14.0	27.0	27.5	11.0

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.9

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.2
Total Del/Veh (s)	3.9	1.3	1.1	3.3	0.7	0.5	8.9	8.9	4.6	11.9	6.1	4.7

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.6

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.5	0.1	0.2
Total Del/Veh (s)	4.0	0.6	2.0	1.6	3.9	1.3

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	224.6

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	All
Denied Del/Veh (s)	0.1	0.3	0.3	0.1	0.0	0.0	0.2	0.2	0.3	0.1	0.2
Total Del/Veh (s)	10.3	16.6	12.5	11.4	3.2	1.6	35.3	32.7	37.4	45.3	21.0

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	13.7	8.0	6.6	19.2	5.1	3.9	28.3	27.5	14.2	33.7	27.8	9.0

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.3

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2
Total Del/Veh (s)	19.2	10.3	8.0	27.2	8.8	5.3	30.2	25.1	18.8	24.3	24.2	15.2

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	13.8

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1
Total Del/Veh (s)	4.6	2.1	1.8	5.9	1.0	0.5	13.4	13.5	6.5	12.9	14.7	6.8

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.7

5: W. Chicago St. & Middle School Drive Performance by movement























Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.4	0.5	0.1	0.1	0.2
Total Del/Veh (s)	3.1	0.8	2.2	2.9	2.5	4.0	1.5

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	509.7

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes) w/ IMP
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	282	48	528	273	2	15	3	311	7	7	6
Future Volume (veh/h)	0	282	48	528	273	2	15	3	311	7	7	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1767	1767	1767	1826	1826	1826	1767	1767	1767	1811	1811	1811
Adj Flow Rate, veh/h	0	397	68	686	355	3	18	4	370	10	10	8
Peak Hour Factor	0.71	0.71	0.71	0.77	0.77	0.77	0.84	0.84	0.84	0.71	0.71	0.71
Percent Heavy Veh, %	9	9	9	5	5	5	9	9	9	6	6	6
Cap, veh/h	450	378	319	700	778	659	121	27	656	17	17	14
Arrive On Green	0.00	0.21	0.21	0.59	0.71	0.71	0.09	0.09	0.09	0.03	0.03	0.03
Sat Flow, veh/h	1682	1767	1494	1739	1826	1546	1389	309	1489	603	603	483
Grp Volume(v), veh/h	0	397	68	686	355	3	22	0	370	28	0	0
Grp Sat Flow(s),veh/h/ln	1682	1767	1494	1739	1826	1546	1697	0	1489	1689	0	0
Q Serve(g_s), s	0.0	17.1	3.0	26.1	6.6	0.0	1.0	0.0	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	17.1	3.0	26.1	6.6	0.0	1.0	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.82		1.00	0.36		0.29
Lane Grp Cap(c), veh/h	450	378	319	700	778	659	148	0	656	49	0	0
V/C Ratio(X)	0.00	1.05	0.21	0.98	0.46	0.00	0.15	0.00	0.56	0.57	0.00	0.00
Avail Cap(c_a), veh/h	450	378	319	700	778	659	176	0	680	106	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.71	0.71	0.71	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	31.5	25.9	14.4	7.6	6.6	33.7	0.0	16.7	38.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	60.4	1.5	23.6	1.4	0.0	0.5	0.0	1.0	10.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.1	1.1	10.7	2.2	0.0	0.4	0.0	5.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	91.9	27.4	38.1	8.9	6.6	34.2	0.0	17.8	48.5	0.0	0.0
LnGrp LOS	A	F	C	D	A	A	C	A	B	D	A	A
Approach Vol, veh/h		465			1044			392			28	
Approach Delay, s/veh		82.4			28.1			18.7			48.5	
Approach LOS		F			C			B			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	35.0	24.0		12.7	18.0	41.0		8.3				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	24.1	17.1		8.3	7.1	34.1		5.0				
Max Q Clear Time (g_c+I1), s	28.1	19.1		3.0	0.0	8.6		3.3				
Green Ext Time (p_c), s	0.0	0.0		0.7	0.0	0.4		0.0				

Intersection Summary

HCM 6th Ctrl Delay	39.6
HCM 6th LOS	D

Notes

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

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes) w/ IMP
 MD Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗		↕	↘
Traffic Volume (veh/h)	1	171	42	368	214	1	48	6	480	1	1	2
Future Volume (veh/h)	1	171	42	368	214	1	48	6	480	1	1	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1663	1663	1663	1752	1752	1752	1767	1767	1767	1900	1900	1900
Adj Flow Rate, veh/h	1	186	46	396	230	1	55	7	545	2	2	3
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.88	0.88	0.88	0.60	0.60	0.60
Percent Heavy Veh, %	16	16	16	10	10	10	9	9	9	0	0	0
Cap, veh/h	658	310	260	709	326	276	162	21	617	5	5	7
Arrive On Green	0.30	0.19	0.19	0.30	0.19	0.19	0.11	0.11	0.11	0.01	0.01	0.01
Sat Flow, veh/h	1584	1663	1394	1668	1752	1485	1501	191	1497	497	497	746
Grp Volume(v), veh/h	1	186	46	396	230	1	62	0	545	7	0	0
Grp Sat Flow(s),veh/h/ln	1584	1663	1394	1668	1752	1485	1692	0	1497	1741	0	0
Q Serve(g_s), s	0.0	6.7	1.8	3.8	8.0	0.0	2.2	0.0	2.1	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	6.7	1.8	3.8	8.0	0.0	2.2	0.0	2.1	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.89		1.00	0.29		0.43
Lane Grp Cap(c), veh/h	658	310	260	709	326	276	182	0	617	16	0	0
V/C Ratio(X)	0.00	0.60	0.18	0.56	0.71	0.00	0.34	0.00	0.88	0.44	0.00	0.00
Avail Cap(c_a), veh/h	658	310	260	709	326	276	216	0	647	214	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.0	24.2	22.3	15.5	24.8	21.5	26.9	0.0	17.6	32.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	8.4	1.5	0.9	11.2	0.0	1.1	0.0	13.2	18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.6	4.1	4.1	0.0	0.9	0.0	8.7	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	32.6	23.7	16.4	36.0	21.6	28.0	0.0	30.8	50.0	0.0	0.0
LnGrp LOS	B	C	C	B	D	C	C	A	C	D	A	A
Approach Vol, veh/h		233			627			607				7
Approach Delay, s/veh		30.8			23.6			30.5				50.0
Approach LOS		C			C			C				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.7	19.0		12.7	26.7	19.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	11.1	12.1		8.3	11.1	12.1		8.0				
Max Q Clear Time (g_c+I1), s	5.8	8.7		4.2	2.0	10.0		2.3				
Green Ext Time (p_c), s	0.6	0.1		1.0	0.0	0.1		0.0				

Intersection Summary

HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

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

HCM 6th Signalized Intersection Summary
 1: Olds Street/Walnut Street & W. Chicago St.

Horizon 2042 Road Diet (3-Lanes) w/ IMP
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗		↑	↗		↕	
Traffic Volume (veh/h)	1	313	54	416	237	3	45	4	576	4	0	0
Future Volume (veh/h)	1	313	54	416	237	3	45	4	576	4	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1841	1841	1841	1841	1841	1841	1900	1900	1900
Adj Flow Rate, veh/h	1	368	64	457	260	3	54	5	597	7	0	0
Peak Hour Factor	0.85	0.85	0.85	0.91	0.91	0.91	0.84	0.84	0.84	0.60	0.60	0.60
Percent Heavy Veh, %	7	7	7	4	4	4	4	4	4	0	0	0
Cap, veh/h	545	413	346	593	634	534	191	18	619	16	0	0
Arrive On Green	0.16	0.23	0.23	0.46	0.57	0.57	0.12	0.12	0.12	0.01	0.00	0.00
Sat Flow, veh/h	1711	1796	1502	1753	1841	1552	1611	149	1560	1809	0	0
Grp Volume(v), veh/h	1	368	64	457	260	3	59	0	597	7	0	0
Grp Sat Flow(s),veh/h/ln	1711	1796	1502	1753	1841	1552	1760	0	1560	1810	0	0
Q Serve(g_s), s	0.0	13.9	2.4	9.8	5.5	0.1	2.1	0.0	6.7	0.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.9	2.4	9.8	5.5	0.1	2.1	0.0	6.7	0.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.92		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	545	413	346	593	634	534	209	0	619	16	0	0
V/C Ratio(X)	0.00	0.89	0.19	0.77	0.41	0.01	0.28	0.00	0.96	0.43	0.00	0.00
Avail Cap(c_a), veh/h	545	413	346	593	634	534	209	0	619	129	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.4	26.1	21.7	15.0	10.9	9.8	28.1	0.0	20.6	34.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	23.9	1.2	5.5	1.7	0.0	0.7	0.0	27.5	16.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	0.9	5.1	2.1	0.0	0.9	0.0	13.1	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	50.0	22.9	20.5	12.7	9.8	28.9	0.0	48.2	51.0	0.0	0.0
LnGrp LOS	B	D	C	C	B	A	C	A	D	D	A	A
Approach Vol, veh/h		433			720			656				7
Approach Delay, s/veh		45.9			17.7			46.5				51.0
Approach LOS		D			B			D				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	23.0		14.0	18.4	31.0		6.6				
Change Period (Y+Rc), s	6.9	6.9		5.7	6.9	6.9		6.0				
Max Green Setting (Gmax), s	15.1	16.1		8.3	7.1	24.1		5.0				
Max Q Clear Time (g_c+I1), s	11.8	15.9		8.7	2.0	7.5		2.3				
Green Ext Time (p_c), s	0.5	0.0		0.0	0.0	0.2		0.0				

Intersection Summary

HCM 6th Ctrl Delay	34.9
HCM 6th LOS	C

Notes

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

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.3	0.5	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.1	0.1	0.1
Total Del/Veh (s)	15.2	5.8	13.4	3.7	7.5	41.2	56.8	10.0	40.6	48.1	11.6	11.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.2
Total Del/Veh (s)	14.3	6.6	4.7	11.4	5.7	4.4	35.0	31.2	9.6	22.7	35.6	12.4

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	9.2

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.3	0.2	0.3	0.3
Total Del/Veh (s)	35.4	10.3	6.2	53.6	14.0	9.2	61.3	60.4	46.6	34.7	35.0	26.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	24.9

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	5.6	1.9	1.4	4.2	2.2	0.9	21.1	16.3	6.4	35.7	18.2	19.2

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	3.6

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.6	0.6	0.1	0.1	0.3
Total Del/Veh (s)	4.8	0.5	0.6	0.3	8.7	7.5	0.8

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	526.3

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.0		0.2	0.2	0.2	0.1	0.1	0.1	0.2
Total Del/Veh (s)	12.8	3.5	8.5	3.2		36.6	35.1	11.1	41.0	57.0	4.2	10.0

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.1	0.1	0.1
Total Del/Veh (s)	11.2	7.0	5.0	16.2	6.0	4.9	28.9	28.4	16.1	23.7	23.7	6.8

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	8.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.2	0.2	0.2
Total Del/Veh (s)	10.9	4.9	3.8	11.7	5.5	3.2	26.8	24.7	11.5	28.6	25.1	10.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	8.6

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.1
Total Del/Veh (s)	4.5	1.2	0.9	3.0	0.9	0.2	11.8	9.2	4.7	10.3	13.8	4.7

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	1.7

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.3	0.4	0.1	0.2
Total Del/Veh (s)	3.3	0.6	0.2	0.0	4.3	0.4

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	219.6

1: Olds Street/Walnut Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	All
Denied Del/Veh (s)		0.3	0.2	0.0	0.0	0.0	0.2	0.2	0.3	0.1	0.2
Total Del/Veh (s)		15.9	5.7	12.6	4.2	0.7	35.2	34.0	32.8	36.8	19.6

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.2	0.0	0.1	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1
Total Del/Veh (s)	12.3	7.1	5.9	17.8	4.8	3.7	29.9	34.0	21.2	31.2	19.8	9.4

2: West Street/Water Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	7.8

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.3	0.2
Total Del/Veh (s)	25.8	14.0	10.9	27.9	8.9	6.9	29.8	27.6	19.0	31.9	34.2	23.4

3: Maumee Street/Evans Street (M-99) & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.1
Total Del/Veh (s)	17.2

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.1
Total Del/Veh (s)	5.2	2.2	1.7	5.5	0.7	0.4	14.6	13.6	6.9	14.8	13.8	6.7

4: East Street/Wright Street & W. Chicago St. Performance by movement

Movement	All
Denied Del/Veh (s)	0.0
Total Del/Veh (s)	2.7

5: W. Chicago St. & Middle School Drive Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.4	0.2		0.1	0.2
Total Del/Veh (s)	4.9	0.8	0.3	0.2		4.9	0.6

Total Zone Performance

Denied Del/Veh (s)	0.3
Total Del/Veh (s)	554.3

NTCIP TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED	PRE-EMPT COUNTDOWN PEDS
MINIMUM GREEN		7	10		7	7	10		5	12/19/19	<input type="checkbox"/>
PASSAGE / EXTEND1		3.0	0.0		3.0	3.0	0.0		3.0		<input checked="" type="checkbox"/>
MAXIMUM GREEN NO. 1		24	19		14	24	19		14		
MAXIMUM GREEN NO. 2		0	0		0	0	0		0		
YELLOW CLEARANCE		3.9	3.9		3.6	3.9	3.9		3.0		
ALL RED CLEARANCE		3.0	3.0		2.1	3.0	3.0		3.0		
WALK		0	7		7	0	7		7		
FLASHING DON'T WALK (FDW) CLEARANCE		0	20		17	0	11		15		
EXT PED CLR (EOG, EOY, 3.0s)		N/A	3.0s		3.0s	N/A	3.0s		3.0s		
WALK REST MODIFIER (Y, N)		N/A	N		N	N/A	N		N		
START UP STATE (G/W, R, G, Y)		R	G/W		R	R	G/W		R		
VEHICLE RECALL (NONE, MIN, MAX, SOFT)		NONE	MAX		NONE	NONE	MAX		NONE		
PEDESTRIAN RECALL (NONE, RECL, OTHR)		NONE	NONE		NONE	NONE	RECL		NONE		
DUAL ENTRY (Y, N)		Y	N		Y	Y	N		Y		
MODE (CRD, MIN, MAX, NOCRD)		NOCRD	CRD		NOCRD	NOCRD	CRD		NOCRD		
DAILY FLASH (Y, R, DK, NA)		NA	NA		NA	NA	NA		NA		
CONFLICT FLASH (Y, R, DK)		R	R		R	R	R		R		
EVNT/ACTN PLN 1	OFFSET 0	CYCLE 65	18	19	14	18	19		14		
EVNT/ACTN PLN 2	OFFSET 58	CYCLE 80	31	24	14	14	41		11		
EVNT/ACTN PLN 3	OFFSET 22	CYCLE 70	23	22	14	14	31		11		
EVNT/ACTN PLN 4	OFFSET 32	CYCLE 70	15	27	14	15	27		14		
EVNT/ACTN PLN	OFFSET	CYCLE									
EVNT/ACTN PLN	OFFSET	CYCLE									

REMARKS

12/18/19 - NB RTGA wired to phase 1.

12/10/19 - NB & SB Split phased.

06/24/19 - Timing for signal modernization JN 129231.

3/13/23 - Road Diet optimization

HOURS OF OPERATION	FLASH HOURS:
Event Action Plan 1: Normal	<input type="checkbox"/> DAILY <input type="checkbox"/> NONE <input checked="" type="checkbox"/>
Event Action Plan 2: AM Peak (06:00 - 09:00) Monday - Friday	<input type="text"/> to <input type="text"/>
Event Action Plan 3: PM Peak (14:00 - 18:00) Monday - Friday	<input type="text"/> to <input type="text"/>
Event Action Plan 4: MIS Race Dial (15:30 - 20:30) Saturday - Sunday	

PHASE	VEHICLE OVERLAPS										CONTROLLER and FIRMWARE#	PREPARED BY:
1 WB US-12/M-99 (Chicago Street)	Overlap Phase	Load Bay	Phases Overlapped	T.G. (s)	Y (s)	R (s)	FYA Phases Perm	FYA Phases Prot	Flash Daily	Flash Confl	<input type="checkbox"/> Siemens (SEPAC)	WRS
2 EB US-12 (Chicago Street)	A = WB US-12 (Chicago) FYA	9		0.0	3.9		2	1	N/A	R	<input checked="" type="checkbox"/> ECONOLITE (EOS)	DATE:
3	=										<input type="checkbox"/> Other:	12/18/19
4 NB M-99 (Olds Street)	C = EB US-12 (Chicago) FYA	11		0.0	3.9		6	5	N/A	R	LOCATION:	
5 EB US-12 (Chicago Street)	=										US-12/M-99 (Chicago) at M-99 (Olds) / Walnut	
6 WB US-12/M-99 (Chicago Street)	=										CITY/TWP: City of Jonesville	
7	=										COUNTY : Hillsdale County	
8 SB Walnut Street	=										MILE POINT	CONTROL SECTION-SPOT #
											0.00	30061-01-003
											Job # (If Applicable): 129231	

NTCIP TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED	PRE-EMPT COUNTDOWN PEDS <input checked="" type="checkbox"/>
MINIMUM GREEN			10		7		10		7	REMARKS 06/24/19 - Timing for signal modernization JN 129231. <div style="border: 1px solid red; padding: 5px; display: inline-block; color: red; font-weight: bold;">3/13/23 - Road Diet optimization</div>	
PASSAGE / EXTEND1			0.0		3.0		0.0		3.0		
MAXIMUM GREEN NO. 1			35		35		35		35		
MAXIMUM GREEN NO. 2			0		0		0		0		
YELLOW CLEARANCE			3.2		3.0		3.2		3.0		
ALL RED CLEARANCE			2.3		2.9		2.3		2.9		
WALK			7		7		7		7		
FLASHING DON'T WALK (FDW) CLEARANCE			11		15		11		15		
EXT PED CLR (EOG, EOY, 3.0s)			3.0s		3.0s		3.0s		3.0s		
WALK REST MODIFIER (Y, N)			N		N		N		N		
START UP STATE (G/W, R, G, Y)			G/W		R		G/W		R		
VEHICLE RECALL (NONE, MIN, MAX, SOFT)			MAX		NONE		MAX		NONE		
PEDESTRIAN RECALL (NONE, RECL, OTHR)			RECL		NONE		RECL		NONE		
DUAL ENTRY (Y, N)			N		Y		N		Y		
MODE (CRD, MIN, MAX, NOCRD)			CRD		NOCRD		CRD		NOCRD		
DAILY FLASH (Y, R, DK, NA)			NA		NA		NA		NA		
CONFLICT FLASH (Y, R, DK)			R		R		R		R		
EVNT/ACTN PLN 1	OFFSET 22	CYCLE 65	36		29		36		29		
EVNT/ACTN PLN 2	OFFSET 68	CYCLE 80	54		26		54		26		
EVNT/ACTN PLN 3	OFFSET 20	CYCLE 70	52		18		52		18		
EVNT/ACTN PLN 4	OFFSET 56	CYCLE 70	46		24		46		24		
EVNT/ACTN PLN	OFFSET	CYCLE									
EVNT/ACTN PLN	OFFSET	CYCLE									

HOURS OF OPERATION	FLASH HOURS:
Event Action Plan 1: Normal	<input type="checkbox"/> DAILY <input type="checkbox"/> NONE <input checked="" type="checkbox"/>
Event Action Plan 2: AM Peak (06:00 - 09:00) Monday - Friday	<input type="text"/> to <input type="text"/>
Event Action Plan 3: PM Peak (14:00 - 18:00) Monday - Friday	<input type="text"/> to <input type="text"/>
Event Action Plan 4: MIS Race Dial (15:30 - 20:30) Saturday - Sunday	

PHASE	VEHICLE OVERLAPS										CONTROLLER and FIRMWARE#	PREPARED BY:
	Overlap Phase	Load Bay	Phases Overlapped	T.G. (s)	Y (s)	R (s)	FYA Phases Perm	Prot	Flash Daily	Confl	<input type="checkbox"/> Siemens (SEPAK)	WRS
1											<input type="checkbox"/> ECONOLITE (EOS)	DATE:
2 EB US-12/M-99 (Chicago Street)	=										<input type="checkbox"/> Other:	06/24/19
3	=											LOCATION:
4 SB Water Street	=											US-12/M-99 (Chicago St.) at Water/West St.
5	=											CITY/TWP: City of Jonesville
6 WB US-12/M-99 (Chicago Street)	=											COUNTY : Hillsdale County
7	=											MILE POINT
8 NB West Street	=											CONTROL SECTION-SPOT #
												8.74
												30061-01-001
												Job # (If Applicable): 129231

NTCIP TRAFFIC SIGNAL TIMING PERMIT

APPROACH	PHASE	1	2	3	4	5	6	7	8	TIMING INSTALLED	PRE-EMPT COUNTDOWN PEDS <input checked="" type="checkbox"/>
MINIMUM GREEN			10		10		10		10	REMARKS 06/24/19 - Timing for signal modernization JN 129231. <div style="border: 1px solid red; padding: 5px; display: inline-block; color: red;">3/13/23 - Road Diet optimization</div>	
PASSAGE / EXTEND1			0.0		3.0		0.0		3.0		
MAXIMUM GREEN NO. 1			60		30		60		30		
MAXIMUM GREEN NO. 2			0		0		0		0		
YELLOW CLEARANCE			3.2		3.6		3.2		3.6		
ALL RED CLEARANCE			2.3		2.9		2.3		2.6		
WALK			7		7		7		7		
FLASHING DON'T WALK (FDW) CLEARANCE			16		16		16		16		
EXT PED CLR (EOG, EOY, 3.0s)			3.0s		3.0s		3.0s		3.0s		
WALK REST MODIFIER (Y, N)			N		N		N		N		
START UP STATE (G/W, R, G, Y)			Y		Y		Y		Y		
VEHICLE RECALL (NONE, MIN, MAX, SOFT)			MAX		NONE		MAX		NONE		
PEDESTRIAN RECALL (NONE, RECL, OTHR)			RECL		NONE		RECL		NONE		
DUAL ENTRY (Y, N)			N		Y		N		Y		
MODE (CRD, MIN, MAX, NOCRD)			CRD		NOCRD		CRD		NOCRD		
DAILY FLASH (Y, R, DK, NA)			NA		NA		NA		NA		
CONFLICT FLASH (Y, R, DK)			R		R		R		R		
EVNT/ACTN PLN 1	OFFSET 39	CYCLE 65	32		33		32		33		
EVNT/ACTN PLN 2	OFFSET 0	CYCLE 80	44		36		44		36		
EVNT/ACTN PLN 3	OFFSET 2	CYCLE 70	43		27		43		27		
EVNT/ACTN PLN 4	OFFSET 0	CYCLE 70	45		25		45		25		
EVNT/ACTN PLN	OFFSET	CYCLE									
EVNT/ACTN PLN	OFFSET	CYCLE									

PHASE	VEHICLE OVERLAPS										FLASH HOURS:	CONTROLLER and FIRMWARE#	PREPARED BY:
	Overlap Phase	Load Bay	Phases Overlapped	T.G. (s)	Y (s)	R (s)	FYA Phases Perm	Prot	Flash Daily	Confl	<input type="checkbox"/> DAILY <input type="checkbox"/> NONE <input checked="" type="checkbox"/>	<input type="checkbox"/> Siemens (SEPAK) <input type="checkbox"/> ECONOLITE (EOS) <input type="checkbox"/> Other:	WRS DATE: 06/24/19
1													
2	EB US-12/M-99 (Chicago Street)	=											
3		=											
4	NB Maumee Street	=											
5		=											
6	WB US-12 (Chicago Street)	=											
7		=											
8	SB M-99 (Evans Street)	=											

LOCATION:
US-12/M-99(Chicago) at M-99(Evans)/Maumee
CITY/TWP: City of Jonesville
COUNTY : Hillsdale County

MILE POINT: 0.00 CONTROL SECTION-SPOT #: 33062-01-001

Job # (If Applicable): 129231

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

Empirical Bayes Analysis

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments

#	Roadway	Roadway Section	Jurisdiction	Roadway Type (2U,5SE, 2U,6SL, 3T, 4U, 5T, 4D, 6D, 8D, 2O, 3O, 4O)	Length of segment, L (miles)	AADT (vehicles/day)	Commercial Vehicle Proportion	Type of on-street parking (none/parallel/angle)	Proportion of curb length with on-street parking (2U,6SE, 2U,6SL, 3T, 4U, 4D, or 5T)	Median width (feet) - for divided only	Lighting (present / not present)	Auto speed enforcement (present / not present)	Commercial driveways (number)	Industrial driveways (number)	Residential driveways (number)	Other driveways (number)	Lane Width (feet)	Left Shoulder Width (feet)	Right Shoulder Width (feet)	County	Roadside fixed object density (fixed objects / m)	Offset to roadside fixed objects (feet)	Additional CMF - 1	Additional CMF - 2	Additional CMF - 3	Additional CMF - Numeric	Observed Crashes		Expected Average Crash Frequency for FI, N _{expected} (Equation A-4 from Part C Appendix)		Expected Average Crash Frequency for PDO, N _{expected} (Equation A-4 from Part C Appendix)		Totals		Distribution for Urban		Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments														
																											Observed Crashes	FI Crashes	Observed PDO Crashes	PDO Crashes	Multiple-vehicle	Single-vehicle	Multiple-vehicle	Single-vehicle	Multiple-vehicle	Single-vehicle	Multiple-vehicle	Single-vehicle	Multiple-vehicle	Single-vehicle	Multiple-vehicle	Single-vehicle	Total	Single Vehicle	Property Damage Only (PDO)	Fatal and Injury (FI)	Total				
Existing condition	Chicago St.	Walnut Street / Olds	Jonesville, MI	5T	0.6	14,471	8%	Parallel (Comm/Ind)	20%		P	NP	12	0	10	1	12	0	0	Hillsdale	25	15	N/A (1,000)	N/A (1,000)	N/A (1,000)		0.13	0.00	0.88	0.06	0.50	0.14	0.64	0.14	1.395	0.743	2.14	-0.16	2.78	-0.01	0.933	2.79	2.30	0.57	4.03	0.50	0.57	0.87	2.79	0.57	4.90
Proposed condition	Chicago St.	Walnut Street / Olds	Jonesville, MI	3T	0.6	14,471	8%	Parallel (Comm/Ind)	20%		P	NP	12	0	10	1	12	0	0	Hillsdale	25	15	N/A (1,000)	N/A (1,000)	N/A (1,000)		0.13	0.00	0.88	0.06	0.49	0.12	0.62	0.09	1.090	1.105	2.20	-0.82	2.81	-0.73	1.392	3.54	3.01	0.57	5.28	0.53	0.57	0.92	3.54	0.57	6.26