Colliers Engineering & Design

Transportation Improvement Study

May 17, 2024

Pedestrian Improvements - Eastman Street

Township of Cranford, Union County, New Jersey

Prepared for:

Township of Cranford
8 Springfield Avenue
Cranford, New Jersey 07016

Prepared by:

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Project No. CDT0090

Colliers Engineering & Design

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Introduction

This Transportation Improvement Study has been prepared for the Township of Cranford ("Applicant") in association with proposed pedestrian improvements along Eastman Street ("Project") within the Township of Cranford, Union County, New Jersey. The proposed Project includes permanently closing a portion of Eastman Street to vehicular traffic and creating a pedestrian spacing to enhance safety and mobility in the study area. The closure of Eastman Street for vehicular traffic is proposed north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue. By closing these roadway segments, the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street will be eliminated. To support efficient traffic operations and safety, the following improvements are recommended:

- Converting Eastman Street to a pedestrian space north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue.
- Eliminating the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street.
- Installation of a new traffic signal and capacity improvements at N. Avenue (Route 28) & Miln Street.
- Geometric and signal improvements at the intersection of N. Avenue (Route 28) & N Union Avenue.
- Othe pedestrian improvements in the area.

N. Avenue (Route 28) currently intersects Eastman Street through a curve, is offset, and the intersection angle is skewed. This existing geometry creates undesirable conditions for both motorists and pedestrians to traverse through the area. The intersection is approximately 200' wide with three (3) crosswalk locations and limited visibility. Eliminating this intersection and relocating the traffic signal to North Avenue (Route 28) & Miln Street will more conventional defined intersection with fewer conflict points and increased visibility along North Avenue (Route 28). The relocation of the traffic signal will provide safety benefits to all users, including motorists and pedestrians.

The expanded public realm created by closing the two Eastman Street segments will increase pedestrian safety and regional connectivity in the downtown area of Cranford. NJ TRANSIT bus route 113 runs along N. Avenue and the NJ TRANSIT Raritan Valley Rail Line Cranford Station is just east of the study area. Additionally, the proposed pedestrian realms will connect the Post Office Plaza and Eastman Plaza parks to the N. Avenue pedestrian realm and local businesses.

The proposed improvements are consistent with guidance in New Jersey Department of Transportation (NJDOT) Complete Streets policy to design streets with safe access for all users, and NJ's Strategic Highway Safety Plan (SHSP) to reduce serious injuries and fatalities on all public roads, and the Safe Routes to Transit Program. A Study Area Location Map is included as **Figure 1** in **Appendix A**. A Concept Plan illustrating the proposed improvements is provided as **Figure 2** in **Appendix A**.

This study presents an evaluation of the current and future traffic conditions in the vicinity of the Project. Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the Project, including the existing physical and traffic operating characteristics;
- Determination of the 2024 Existing Conditions;
- Forecast of the 2024 Existing Traffic Volumes;
- Peak Hour Capacity Analysis for the 2024 Existing Conditions;
- Forecast of the 2024 Improved Traffic Volumes;
- Peak Hour Capacity Analysis for the 2024 Improved Conditions;
- Pedestrian Improements; and
- Summary and Conclusions.

Existing Roadway Conditions

A field investigation was conducted within the study area to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations, and existing vehicular/pedestrian traffic patterns.

Roadways

North Avenue (Route 28) is an east-west oriented urban principal arterial roadway under jurisdiction of the New Jersey Department of Transportation (NJDOT). The roadway provides one (1) travel lane in each direction with a posted speed limit of 25 mph. Within the study area, on-street parking is provided along both sides of the roadway. East of its intersection with Eastman Street, parallel parking is provided along the eastbound travel lane and angled parking is provided along the westbound travel lane. West of its intersection with Eastman Street, angled parking is provided along the westbound travel lane and parallel parking is provided along the eastbound travel lane. It is noted that the Cranford train station is located to the east of the study area along this roadway, which is also serviced by NJ TRANSIT bus route 113.

Union Avenue is a north-south oriented urban minor arterial roadway under jurisdiction of the Township of Cranford. The roadway provides one (1) travel lane in each direction with a posted speed limit of 25 mph. Parallel parking is provided along both sides of the roadway to the north of its intersection with North Avenue (Route 28) and to the south of its intersection with Union Avenue.

Eastman Street is a northwest-southeast oriented local roadway under jurisdiction of the Township of Cranford. The roadway provides one (1) travel lane in each direction with a posted speed limit of 25 mph. North of its intersection with North Avenue (Route 28), parallel parking is provided along the northwest-bound travel lane. South of its intersection with North Avenue (Route 28), angled parking is provided along the southeast-bound travel lane.

Miln Street is a northeast-southwest oriented local roadway under jurisdiction of the Township of Cranford. The roadway provides one (1) travel lane in each direction with a posted speed limit of 25 mph. North of its intersection with Eastman Street, parallel parking is provided along both sides of the roadway. South of its intersection with Eastman Street, parallel parking is provided along the southwest-bound travel lane.

Signalized Intersections

North Avenue (Route 28) & Eastman Street is a signalized four-leg intersection operating with a background cycle length of 90 seconds. N. Avenue (Route 28) currently intersects Eastman Street through a curve, is offset, and the intersection angle is skewed. The eastbound and westbound approaches of North Avenue (Route 28) each provide one (1) shared lane for all turning movements. The southeast-bound approach of Eastman Street provides one (1) dedicated left-turn lane and one (1) shared through/right-turn lane. It is noted that south of the intersection, Eastman Street provides one-way traffic flow in the southeast-bound direction. Thus, the northwest-bound approach of Eastman Street provides one (1) receiving lane for southeast-bound traffic.

North Avenue (Route 28) & Union Avenue is a signalized four-leg intersection operating with a background cycle length of 90 seconds. The eastbound approach of North Avenue (Route 28) provides one (1) shared lane for all turning movements. The westbound approach of North Avenue (Route 28) provides one (1) dedicated left-turn lane and one (1) shared through/right-turn lane. The northbound approach of Union Avenue provides one (1) dedicated through lane and one (1) dedicated right-turn lane. The southbound approach of Union Avenue provides one (1) shared lane for all turning movements.

Unsignalized Intersections

North Avenue (Route 28) & Miln Street is an unsignalized three-leg intersection with the southwest-bound approach of Miln Street under stop control. The eastbound approach of North Avenue (Route 28) provides one (1) shared left-turn/through lane. The westbound approach of North Avenue (Route 28) provides one (1) shared through/right-turn lane. The southwest-bound approach of Miln Street provides one (1) shared left-turn/right-turn lane.

Eastman Street & Miln Street is an unsignalized four-leg intersection under all-way stop control. The northeast-bound and southwest-bound approaches of Eastman Street each provide one (1) shared lane for all turning movements. The northwest-bound and southeast-bound approaches of Miln Street each provide one (1) shared lane for all turning movements.

Existing Traffic Conditions

Traffic volume data was collected within the study area to gain an understanding of the existing roadway conditions and operations through turning movement counts ("TMC") conducted on Thursday September 21, 2023, from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, and on Saturday, September 23, 2023, from 11:00 AM to 1:00 PM, at the following intersections:

- North Avenue (Route 28) & Eastman Street;
- North Avenue (Route 28) & Miln Street; and
- Eastman Street & Miln Street.

Table 1 – Data Collection Efforts and Established Network Peak Hours (1 of 2)

Peak Period	Date Collected	Traffic Count Time Frame	Established Network Peak Hour
Weekday Morning	Thursday, September 21, 2023	7:00 AM – 9:00 AM	7:45 AM – 8:45 AM
Weekday Evening		4:00 PM – 6:00 PM	4:00 PM – 5:00 PM
Saturday Midday	Saturday, September 23, 2023	11:00 AM – 1:00 PM	11:00 AM – 12:00 PM

Additional TMC data was collected on Thursday, March 21, 2024, from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, and on Saturday, March 23, 2024, from 11:00 AM to 1:00 PM, at the following intersection:

- North Avenue (Route 28) & Union Avenue.

Table 2 – Data Collection Efforts and Established Network Peak Hours (2 of 2)

Peak Period	Date Collected	Traffic Count Time Frame	Established Network Peak Hour
Weekday Morning	Thursday, March 21, 2024	7:00 AM – 9:00 AM	7:45 AM – 8:45 AM
Weekday Evening		4:00 PM – 6:00 PM	4:00 PM – 5:00 PM
Saturday Midday	Saturday, March 23, 2024	11:00 AM – 1:00 PM	11:00 AM – 12:00 PM

The 2024 Existing traffic volumes were established by growing the 2023 TMC data by the recommended NJDOT annual background growth rate of 2.25% for urban principal and minor arterial roadways within Union County, then volume balancing between intersections in an upward fashion. A Volume Flow Diagram illustrating the 2024 Existing Conditions is provided as **Figure 3** in **Appendix A**. The processed TMC data is provided in **Appendix B**.

Future Traffic Conditions

Proposed Vehicular and Pedestrian Improvements

The proposed Project includes permanently closing a portion of Eastman Street to vehicular traffic and creating a pedestrian spacing to enhance safety and mobility in the study area. The closure of Eastman Street for vehicular traffic is proposed north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue. By closing these roadway segments, the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street will be eliminated. To support efficient traffic operations and safety, the following improvements are recommended:

- Converting Eastman Street to a pedestrian space north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue.
- Eliminating the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street.
- Installation of a new traffic signal and capacity improvements at N. Avenue (Route 28) & Miln Street. Intersection radii will be improved. Miln Street will be restriped to prohibit parking near Route 28 and a 2nd approach lane (dedicated left-turn and right-turn lanes) will be provided.
- Geometric and signal improvements at the intersection of N. Avenue (Route 28) & N Union Avenue.
- Othe pedestrian improvements in the area.

N. Avenue (Route 28) currently intersects Eastman Street through a curve, is offset, and the intersection angle is skewed. This existing geometry creates undesirable conditions for both motorists and pedestrians to traverse through the area. The intersection is approximately 200' wide with three (3) crosswalk locations and limited visibility. Eliminating this intersection and relocating the traffic signal to North Avenue (Route 28) & Miln Street will more conventional defined intersection with fewer conflict points and increased visibility along North Avenue (Route 28). The relocation of the traffic signal will provide safety benefits to all users, including motorists and pedestrians.

The expanded public realm created by closing the two Eastman Street segments will increase pedestrian safety and regional connectivity in the downtown area of Cranford. NJ TRANSIT bus route 113 runs along N. Avenue and the NJ TRANSIT Raritan Valley Rail Line Cranford Station is just east of the study area. Additionally, the proposed pedestrian realms will connect the Post Office Plaza and Eastman Plaza parks to the N. Avenue pedestrian realm and local businesses.

The Concept Plan of the improvements is provided in **Appendix A** and **Figure 2**.

Redistributed Traffic

Eastman Street Closure North of Route 28

Northbound and southbound traffic currently traversing the Eastman Street segment between Miln Street and Route 28 will be rerouted to the intersection of N. Avenue & Miln Street. With the existing traffic signal and intersection at Route 28 & Eastman Street proposed to be eliminated and traffic rerouted to the intersection of N. Avenue & Miln Street, it is proposed to signalize the intersection of N. Avenue & Miln Street.

Eastman Street Closure South of Route 28

Southbound traffic currently traversing the Eastman Street segment between Route 28 and Union Avenue/Walnut Avenue will be rerouted to the intersection of N. Avenue & Union Avenue.

A Volume Flow Diagram illustrating the Redistributed Trips is provided as **Figure 4** in **Appendix A**.

2024 Improved Conditions

The 2024 Improved traffic volumes were forecasted by applying the trip redistribution to the existing traffic volumes within the roadway network. A Volume Flow Diagram illustrating the 2024 Improved Conditions is provided as **Figure 5** in **Appendix A**.

HCM Capacity Analysis

The peak hour traffic operations within the project vicinity were evaluated at the study intersections. The analyses were performed using the latest version of *Synchro Trafficware*, a traffic analysis and simulation program. The results of these analyses provide Levels of Service ("LOS"), volume/capacity descriptions, and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics, such as freedom to maneuver, traffic interruption, comfort, and convenience. Six (6) LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F," with Level "A" representing excellent conditions with no delays, and failure and deficient operations denoted by Level "F." The HCM LOS criteria for signalized and unsignalized intersections is summarized in **Table 3**.

Table 3 – HCM LOS/Delay Criteria

Level of Service	Average Control Delay (sec/veh)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

The Levels of Services for the 2024 Existing and Improved Conditions are detailed in **Table 4**. The capacity analysis calculation worksheets are provided in **Appendix C**.

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Table 4 – Level of Service Summary

Intersection	Movement		2024 Existing						2024 Improved					
			AM Peak		PM Peak		SAT Peak		AM Peak		PM Peak		SAT Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
North Avenue (Route 28) (EB/WB) & Eastman Street (SEB)	EB	LTR	A	6.9	A	7.3	A	6.8	-	-	-	-	-	-
	WB	LTR	A	3.1	A	2.7	A	5.9	-	-	-	-	-	-
	SEB	L	D	39.3	D	37.6	D	37.2	-	-	-	-	-	-
		TR	D	37.7	D	38.4	D	37.5	-	-	-	-	-	-
	Overall		**A**	**8.8**	**A**	**8.3**	**A**	**9.4**	**-**	**-**	**-**	**-**	**-**	
North Avenue (Route 28) (EB/WB) & Union Avenue (NB/SB)	EB	LTR	B	18.5	C	22.7	B	14.3	C	23.0	C	31.1	B	18.1
	WB	L	A	8.4	A	9.9	A	7.0	A	9.0	B	10.9	A	7.4
		TR	B	12.2	B	13.2	A	9.3	B	12.4	B	13.2	A	9.3
	NB	T	D	40.6	D	39.5	D	41.0	D	40.5	D	39.5	D	41.0
		R	C	26.7	C	23.8	C	27.9	C	26.6	C	23.8	C	27.9
	SB	LTR	D	36.8	D	39.3	D	42.7	D	36.7	D	39.3	D	42.7
	Overall		**C**	**22.8**	**C**	**25.0**	**C**	**22.6**	**C**	**23.8**	**C**	**27.3**	**C**	**23.1**
North Avenue (Route 28) (EB/WB) & Miln Street (SWB)	EB	L(T)	a	9.0	a	8.9	a	8.5	B	15.1	B	17.5	B	13.3
	WB	TR	-	-	-	-	-	-	A	3.9	A	3.6	A	5.8
	SWB	L	c	17.8	c	16.1	b	14.8	C	32.7	C	32.3	C	30.9
		R							A	8.1	A	7.4	A	7.4
	Overall		**-**	**-**	**-**	**-**	**-**	**-**	**B**	**11.9**	**B**	**12.6**	**B**	**11.6**
Eastman Street (SEB/NWB) & Miln Street (NEB/SWB)	SEB	LTR	a	9.5	a	8.5	a	8.7	b	11.0	b	10.4	b	10.8
	NWB	LTR	a	8.2	a	8.1	a	8.2	-	-	-	-	-	-
	NEB	L	a	9.0	a	8.4	a	8.9	a	7.6	a	7.6	a	7.7
		TR							-	-	-	-	-	-
	SWB	LTR	a	9.2	a	8.7	a	9.0	-	-	-	-	-	-

Note: Uppercase indicates signalized intersections; lowercase indicates unsignalized intersections.

North Avenue (Route 28) & Eastman Street

2024 Existing Analysis

Under the Existing condition, all intersection movements operate at Levels of Service "D" or better during all peak hours studied. The calculated 95th percentile queues along the eastbound approach of North Avenue (Route 28) and the southeast-bound approach of Eastman Street extend to Miln Street during all peak hours studied.

2024 Improved Analysis

The proposed Project includes permanently closing a portion of Eastman Street to vehicular traffic and creating a pedestrian spacing to enhance safety and mobility in the study area. The closure of Eastman Street for vehicular traffic is proposed north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue. By closing these roadway segments, the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street will be eliminated.

With the removal of this intersection, the eastbound and westbound approaches of North Avenue (Route 28) will operate freely at this location.

North Avenue (Route 28) & Union Avenue

2024 Existing Analysis

Under the Existing condition, all intersection movements operate at Levels of Service "D" or better during all peak hours studied. The intersection operates at an overall Level of Service "C" during all peak hours studied.

2024 Improved Analysis

Under the Improved condition, all intersection movements will continue to operate at or near Existing Levels of Service. The intersection will continue to operate at an overall Level of Service "C" during all peak hours studied.

North Avenue (Route 28) & Miln Street

2024 Existing Analysis

Under the Existing condition, all intersection movements operate at Levels of Service "C" or better during all peak hours studied.

2024 Improved Analysis

Under the Improved condition, it is proposed to relocate the traffic signal from North Avenue (Route 28) & Eastman Street to this intersection. It is also proposed to remove the two (2) on-street parking spaces along the southwest-bound approach of Miln Street to provide dedicated left- and right-turn lanes. All intersection movements will operate at Levels of Service "C" or better during all peak hours studied. The intersection will operate at an overall Level of Service "B" during all peak hours studied.

Eastman Street & Miln Street

2024 Existing Analysis

Under the Existing condition, all intersection movements operate at Levels of Service “A” during all peak hours studied.

2024 Improved Analysis

As previously mentioned, it is proposed to restrict vehicular traffic from Eastman Street, between Miln Street and Union Avenue. The northeast-bound and southwest-bound approaches of Miln Street will operate freely, while the southeast-bound approach of Eastman Street will remain stop controlled. All intersection movements will operate at Levels of Service “B” or better during all peak hours studied.

Summary and Conclusions

The Traffic Improvement Study evaluated the proposed Eastman Street Closure within the Township of Cranford, Union County, New Jersey. The findings of the Traffic Impact Study are summarized as follows:

1. The proposed Project includes permanently closing a portion of Eastman Street to vehicular traffic and creating a pedestrian spacing to enhance safety and mobility in the study area. The closure of Eastman Street for vehicular traffic is proposed north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue. By closing these roadway segments, the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street will be eliminated. To support efficient traffic operations and safety, the following improvements are recommended:

    - Converting Eastman Street to a pedestrian space north of N. Avenue (Route 28) to Miln Street and south of N. Avenue (Route 28) to Union Avenue.
    - Eliminating the existing skewed intersection and traffic signal at N. Avenue (Route 28) & Eastman Street.
    - Installation of a new traffic signal and capacity improvements at N. Avenue (Route 28) & Miln Street.
    - Geometric and signal improvements at the intersection of N. Avenue (Route 28) & N Union Avenue.
    - Othe pedestrian improvements in the area.

    N. Avenue (Route 28) currently intersects Eastman Street through a curve, is offset, and the intersection angle is skewed. This existing geometry creates undesirable conditions for both motorists and pedestrians to traverse through the area. The intersection is approximately 200' wide with three (3) crosswalk locations and limited visibility. Eliminating this intersection and relocating the traffic signal to North Avenue (Route 28) & Miln Street will more conventional defined intersection with fewer conflict points and increased visibility along North Avenue (Route 28). The relocation of the traffic signal will provide safety benefits to all users, including motorists and pedestrians.

2. The expanded public realm created by closing the two Eastman Street segments will increase pedestrian safety and regional connectivity in the downtown area of Cranford. NJ TRANSIT bus route 113 runs along N. Avenue and the NJ TRANSIT Raritan Valley Rail Line Cranford Station is just east of the study area. Additionally, the proposed pedestrian realms will connect the Post Office Plaza and Eastman Plaza parks to the N. Avenue pedestrian realm and local businesses. The proposed improvements are consistent with guidance in New Jersey Department of Transportation (NJDOT) Complete Streets policy to design streets with safe access for all users, and NJ's Strategic Highway Safety Plan (SHSP) to reduce serious injuries and fatalities on all public roads, and the Safe Routes to Transit Program.

3. Under the Improved condition, all movements at the intersection of North Avenue (Route 28) & Union Avenue will continue to operate at or near Existing Levels of Service during all peak hours studied. Overall intersection Levels of Service will be maintained during all peak hours studied.

4. Under the Improved condition, all movements at the proposed signalization at the intersection of North Avenue (Route 28) & Miln Street will operate at Levels of Service “C” or better during all peak hours studied. The intersection will operate at an overall Level of Service “B” during all peak hours studied.

5. At the intersection of Eastman Street & Miln Street, the northeast-bound and southwest-bound approaches of Miln Street will operate freely, while the southeast-bound approach of Eastman Street will remain stop controlled. Under the Improved Condition, all intersection movements will operate at Levels of Service “B” or better during all peak hours studied.

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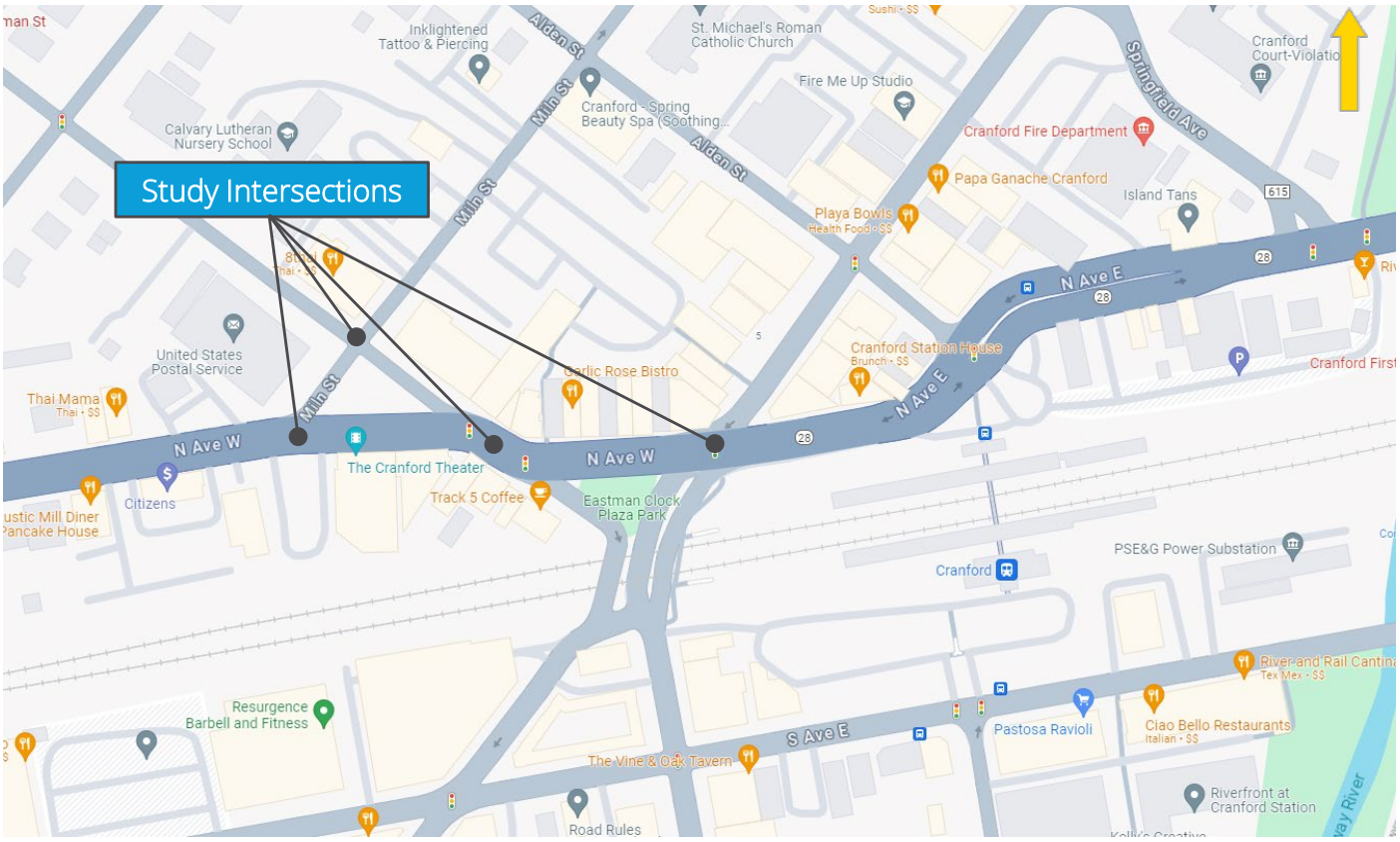
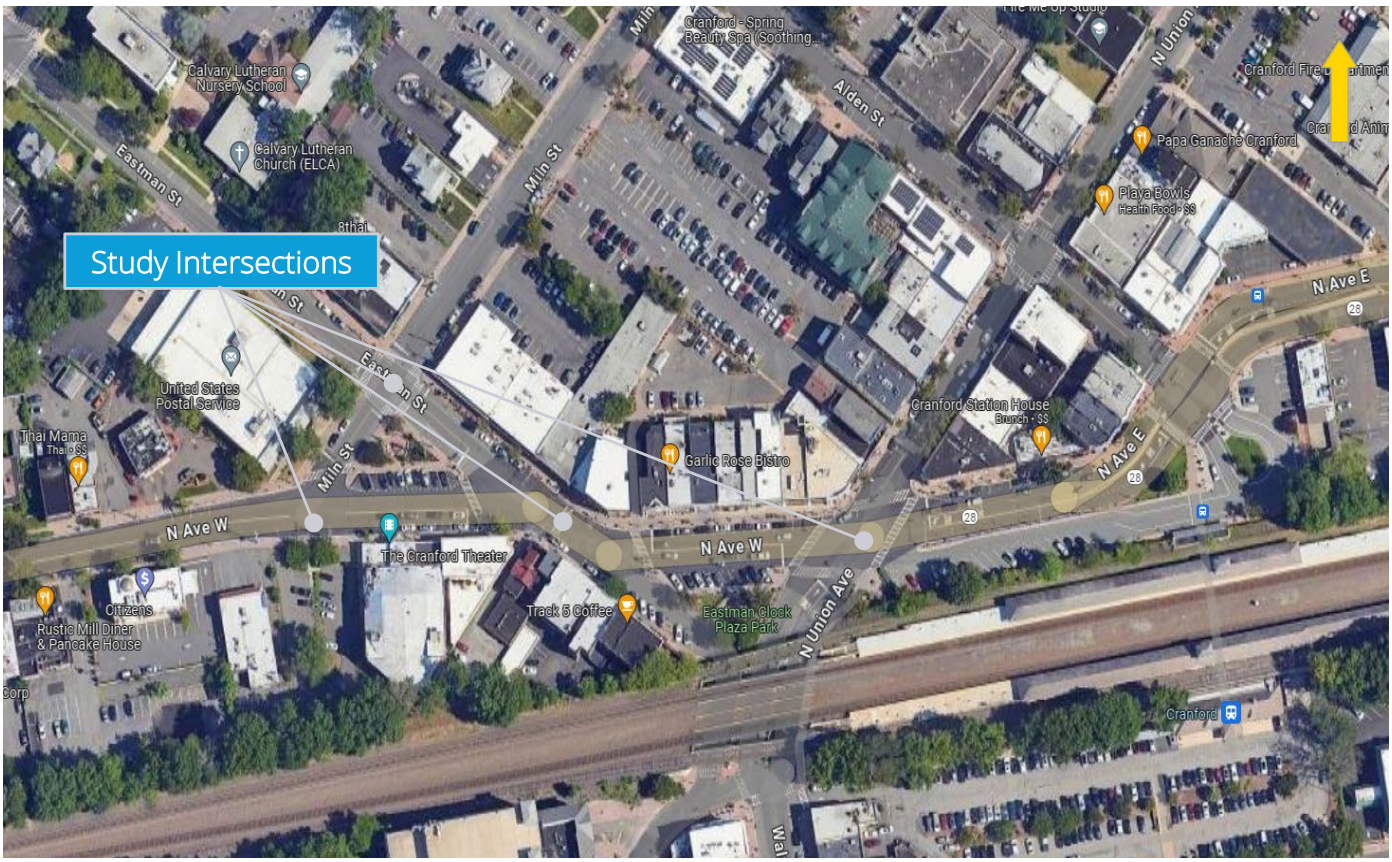
Traffic Improvement Study

Appendix A | Traffic Figures





Colliers Engineering & Design	Eastman Street Closure	**Figure 1**
	Project No. CDT0090	
	Township of Cranford, Union County, New Jersey	**Study Area Location Map**

FIGURE 2

C:\CDT0090\Transportation\Concept\R-PL01-CNPT.dwgR-PL06-CONCEPT PLAN By: AZUKOWSKI

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TRAFFIC CONCEPT PLAN
FOR
TOWNSHIP OF CRANFORD

TOWNSHIP OF CRANFORD
UNION COUNTY
NEW JERSEY

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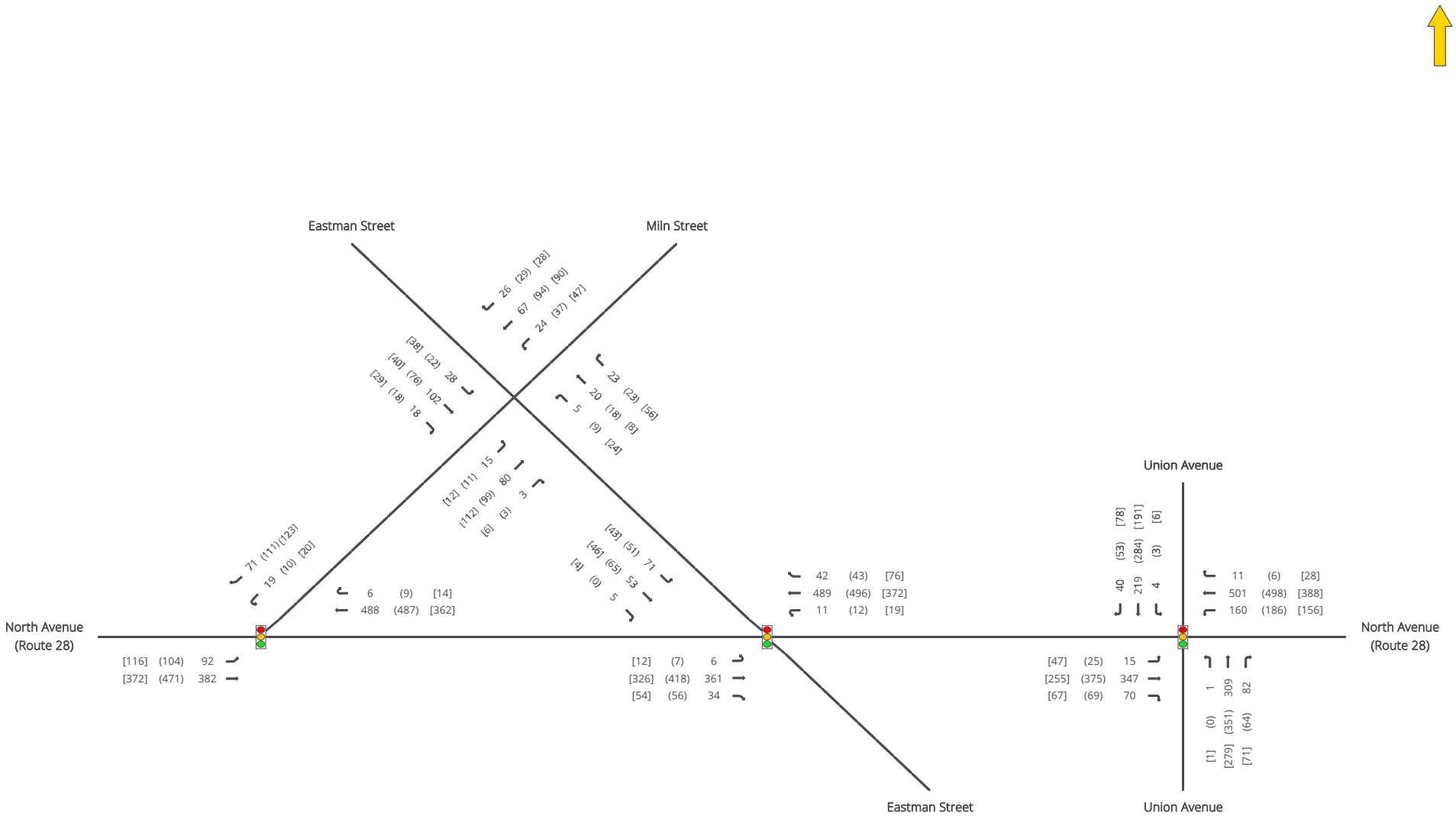
COLLIERS ENGINEERING & DESIGN, INC. DOING BUSINESS AS MASER CONSULTING

SCALE:	DATE:	DRAWN BY:	CHECKED BY:
AS SHOWN	5/17/24	ABZ	NDA

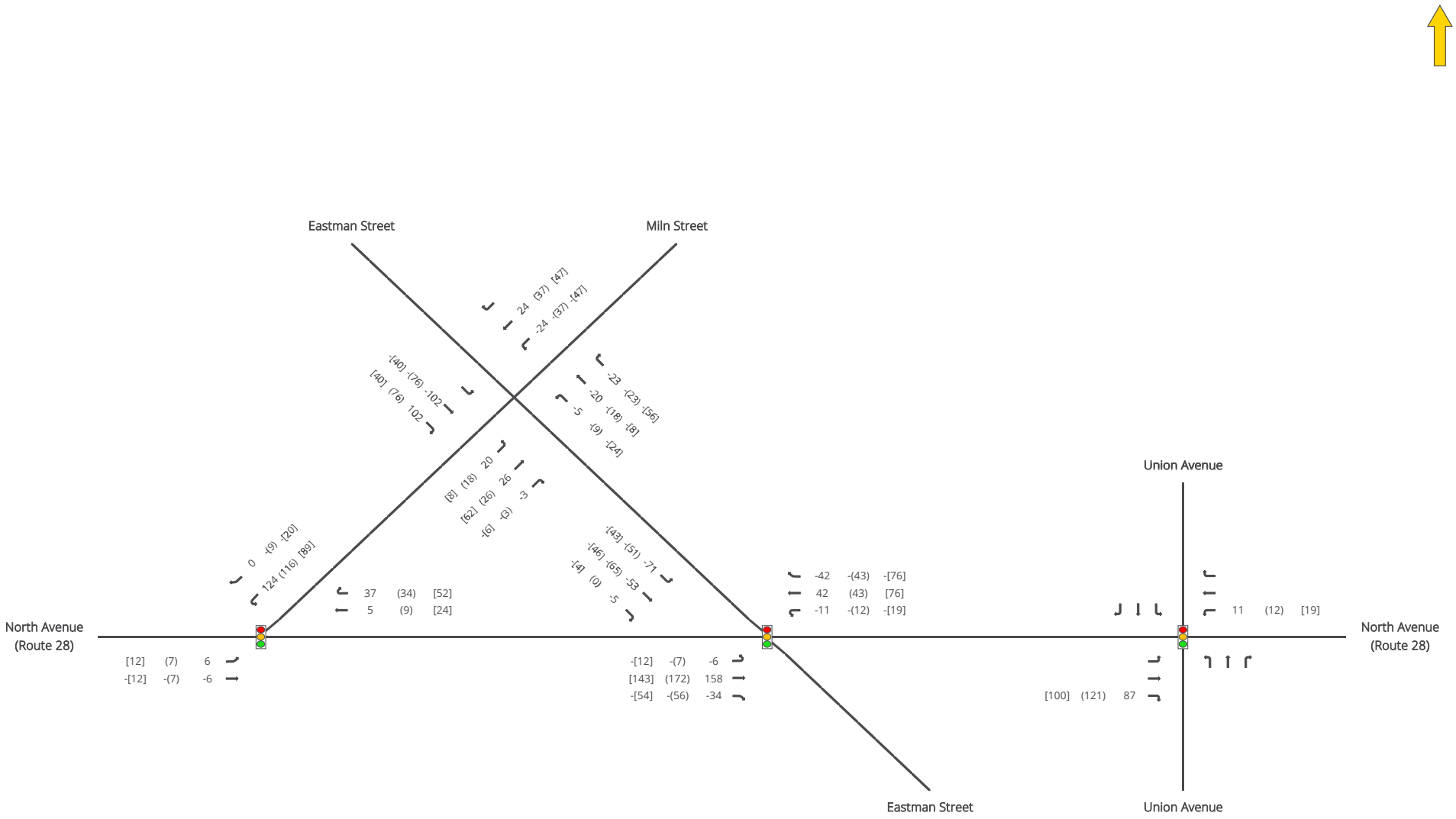
PROJECT NUMBER: CDT0090
DRAWING NAME: R-PL01-CNPT

SHEET TITLE: EASTMAN STREET CLOSURE

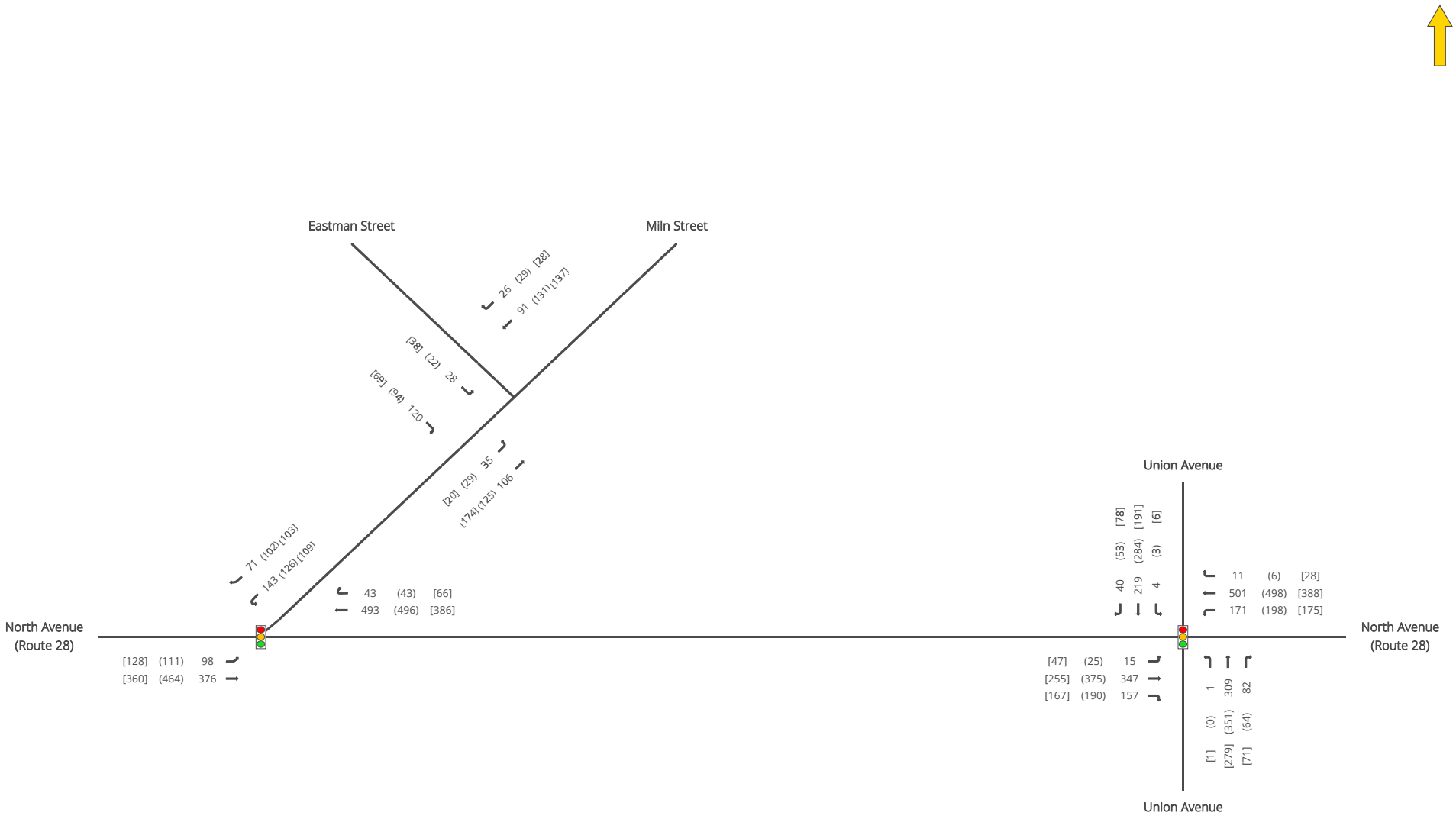
SHEET NUMBER: 1 of 1



Colliers Engineering & Design	Eastman Street Closure Project No. CDT0090 Township of Cranford, Union County, New Jersey	Legend AM Peak Hour: ### PM Peak Hour: (###) SAT Peak Hour: [###] Through Movement: Turning Movement: Signalized Intersection:	**Figure 3** **2024 Existing Conditions** **AM, PM, & SAT Peak Hours**



Colliers Engineering & Design	Eastman Street Closure Project No. CDT0090 Township of Cranford, Union County, New Jersey	Legend AM Peak Hour: ### PM Peak Hour: (###) SAT Peak Hour: [###] Through Movement: Turning Movement: Signalized Intersection:	**Figure 4** **Redistributed Trips** **AM, PM, & SAT Peak Hours**



Colliers Engineering & Design	Eastman Street Closure Project No. CDT0090 Township of Cranford, Union County, New Jersey	Legend AM Peak Hour: ### PM Peak Hour: (###) SAT Peak Hour: [###] Through Movement: Turning Movement: Signalized Intersection:	**Figure 5** **2024 Improved Conditions** **AM, PM, & SAT Peak Hours**

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Traffic Improvement Study

Appendix B | Traffic Count Data

1. North Avenue & Eastman Avenue - TMC

Thu Sep 21, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM, 11 AM-1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111136, Location: 40.655757, -74.305411, Site Code: 1

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Leg	North Avenue						North Avenue						Eastman Avenue						Eastman Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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
2023-09-21 7:00AM	2	62	5	0	**69**	4	0	125	9	0	**134**	4	0	0	0	0	**0**	0	6	6	0	0	**12**	1	**215**
7:15AM	0	68	3	0	**71**	2	3	108	5	0	**116**	4	0	0	0	0	**0**	0	7	4	0	0	**11**	2	**198**
7:30AM	0	66	5	0	**71**	7	1	102	10	0	**113**	11	0	0	0	0	**0**	1	10	10	1	0	**21**	8	**205**
7:45AM	0	91	8	0	**99**	4	2	126	8	0	**136**	9	0	0	0	0	**0**	1	24	15	0	0	**39**	1	**274**
Hourly Total	2	287	21	0	**310**	17	6	461	32	0	**499**	28	0	0	0	0	**0**	2	47	35	1	0	**83**	12	**892**
8:00AM	1	92	7	0	**100**	9	1	100	10	0	**111**	11	0	0	0	0	**0**	6	15	21	4	0	**40**	5	**251**
8:15AM	3	82	9	0	**94**	5	2	113	9	0	**124**	7	0	0	0	0	**0**	7	10	9	1	0	**20**	5	**238**
8:30AM	2	88	9	0	**99**	3	2	110	9	0	**121**	11	0	0	0	0	**0**	6	16	5	0	0	**21**	7	**241**
8:45AM	2	82	14	0	**98**	4	2	94	9	0	**105**	16	0	0	0	2	**2**	7	7	8	1	0	**16**	11	**221**
Hourly Total	8	344	39	0	**391**	21	7	417	37	0	**461**	45	0	0	0	2	**2**	26	48	43	6	0	**97**	28	**951**
4:00PM	3	81	14	0	**98**	5	3	124	11	0	**138**	10	0	0	0	0	**0**	5	11	11	0	0	**22**	11	**258**
4:15PM	2	98	10	0	**110**	3	1	114	9	0	**124**	6	0	0	0	0	**0**	0	9	18	0	0	**27**	4	**261**
4:30PM	2	94	10	0	**106**	6	2	97	8	0	**107**	10	0	0	0	0	**0**	1	18	5	0	0	**23**	7	**236**
4:45PM	0	89	14	0	**103**	3	3	121	9	0	**133**	13	0	0	0	0	**0**	8	6	21	0	0	**27**	3	**263**
Hourly Total	7	362	48	0	**417**	17	9	456	37	0	**502**	39	0	0	0	0	**0**	14	44	55	0	0	**99**	25	**1018**
5:00PM	0	104	12	0	**116**	2	1	97	8	0	**106**	6	0	0	0	0	**0**	16	14	13	1	0	**28**	8	**250**
5:15PM	0	118	9	0	**127**	6	0	83	11	0	**94**	10	0	0	0	0	**0**	2	16	17	0	0	**33**	4	**254**
5:30PM	0	97	22	0	**119**	6	3	95	9	0	**107**	19	0	0	0	1	**1**	9	15	23	0	0	**38**	8	**265**
5:45PM	0	95	11	0	**106**	7	3	93	17	0	**113**	15	0	0	0	2	**2**	6	16	17	0	0	**33**	11	**254**
Hourly Total	0	414	54	0	**468**	21	7	368	45	0	**420**	50	0	0	0	3	**3**	33	61	70	1	0	**132**	31	**1023**
2023-09-23 11:00AM	2	71	10	0	**83**	10	2	91	15	0	**108**	6	0	0	0	2	**2**	4	5	9	0	0	**14**	20	**207**
11:15AM	4	77	13	0	**94**	14	7	99	23	0	**129**	12	0	0	0	3	**3**	7	14	10	2	0	**26**	31	**252**
11:30AM	4	78	19	0	**101**	11	4	78	16	0	**98**	20	0	0	0	1	**1**	5	13	8	0	0	**21**	21	**221**
11:45AM	2	76	9	0	**87**	12	4	81	16	0	**101**	4	0	0	1	0	**1**	4	10	13	2	0	**25**	37	**214**
Hourly Total	12	302	51	0	**365**	47	17	349	70	0	**436**	42	0	0	1	6	**7**	20	42	40	4	0	**86**	109	**894**
12:00PM	2	74	20	0	**96**	7	3	71	22	0	**96**	23	0	0	1	0	**1**	10	5	8	2	0	**15**	34	**208**
12:15PM	6	82	21	0	**109**	7	6	83	18	0	**107**	29	0	0	0	0	**0**	14	15	8	2	0	**25**	37	**241**
12:30PM	0	77	13	0	**90**	3	3	112	12	0	**127**	33	0	0	0	0	**0**	14	11	17	3	0	**31**	52	**248**
12:45PM	1	67	17	0	**85**	5	3	77	14	0	**94**	15	0	0	0	0	**0**	5	17	7	2	0	**26**	19	**205**
Hourly Total	9	300	71	0	**380**	22	15	343	66	0	**424**	100	0	0	1	0	**1**	43	48	40	9	0	**97**	142	**902**
Total	38	2009	284	0	**2331**	145	61	2394	287	0	**2742**	304	0	0	2	11	**13**	138	290	283	21	0	**594**	347	**5680**
% Approach	1.6%	86.2%	12.2%	0%	**-**	-	2.2%	87.3%	10.5%	0%	**-**	-	0%	0%	15.4%	84.6%	**-**	-	48.8%	47.6%	3.5%	0%	**-**	-	-
% Total	0.7%	35.4%	5.0%	0%	**41.0%**	-	1.1%	42.1%	5.1%	0%	**48.3%**	-	0%	0%	0%	0.2%	**0.2%**	-	5.1%	5.0%	0.4%	0%	**10.5%**	-	-
Lights	37	1931	283	0	**2251**	-	61	2326	280	0	**2667**	-	0	0	2	11	**13**	-	286	282	21	0	**589**	-	5520
% Lights	97.4%	96.1%	99.6%	0%	**96.6%**	-	100%	97.2%	97.6%	0%	**97.3%**	-	0%	0%	100%	100%	**100%**	-	98.6%	99.6%	100%	0%	**99.2%**	-	97.2%
Articulated Trucks	0	7	0	0	**7**	-	0	8	1	0	**9**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	16
% Articulated Trucks	0%	0.3%	0%	0%	**0.3%**	-	0%	0.3%	0.3%	0%	**0.3%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.3%
Buses and Single-Unit Trucks	1	71	1	0	**73**	-	0	60	6	0	**66**	-	0	0	0	0	**0**	-	4	1	0	0	**5**	-	144

Leg	North Avenue						North Avenue						Eastman Avenue						Eastman Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
% Buses and Single-Unit Trucks	2.6%	3.5%	0.4%	0%	**3.1%**	-	0%	2.5%	2.1%	0%	**2.4%**	-	0%	0%	0%	0%	**0%**	-	1.4%	0.4%	0%	0%	**0.8%**	-	2.5%
Pedestrians	-	-	-	-	-	143	-	-	-	-	-	295	-	-	-	-	-	137	-	-	-	-	-	346	
% Pedestrians	-	-	-	-	-	98.6%	-	-	-	-	-	97.0%	-	-	-	-	-	99.3%	-	-	-	-	-	99.7%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	9	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	1.4%	-	-	-	-	-	3.0%	-	-	-	-	-	0.7%	-	-	-	-	-	0.3%	-

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

1. North Avenue & Eastman Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
AM Peak (Sep 21 2023 7:45AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111136, Location: 40.655757, -74.305411, Site Code: 1

Leg	North Avenue						North Avenue						Eastman Avenue						Eastman Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2023-09-21 7:45AM	0	91	8	0	**99**	4	2	126	8	0	**136**	9	0	0	0	0	**0**	1	24	15	0	0	**39**	1	**274**
8:00AM	1	92	7	0	**100**	9	1	100	10	0	**111**	11	0	0	0	0	**0**	6	15	21	4	0	**40**	5	**251**
8:15AM	3	82	9	0	**94**	5	2	113	9	0	**124**	7	0	0	0	0	**0**	7	10	9	1	0	**20**	5	**238**
8:30AM	2	88	9	0	**99**	3	2	110	9	0	**121**	11	0	0	0	0	**0**	6	16	5	0	0	**21**	7	**241**
Total	6	353	33	0	**392**	21	7	449	36	0	**492**	38	0	0	0	0	**0**	20	65	50	5	0	**120**	18	**1004**
% Approach	1.5%	90.1%	8.4%	0%	**-**	-	1.4%	91.3%	7.3%	0%	**-**	-	0%	0%	0%	0%	**-**	-	54.2%	41.7%	4.2%	0%	**-**	-	-
% Total	0.6%	35.2%	3.3%	0%	**39.0%**	-	0.7%	44.7%	3.6%	0%	**49.0%**	-	0%	0%	0%	0%	**0%**	-	6.5%	5.0%	0.5%	0%	**12.0%**	-	-
PHF	0.500	0.959	0.917	-	**0.980**	-	0.875	0.891	0.900	-	**0.904**	-	-	-	-	-	**-**	-	0.677	0.595	0.313	-	**0.750**	-	0.916
Lights	6	334	33	0	**373**	-	7	427	35	0	**469**	-	0	0	0	0	**0**	-	63	50	5	0	**118**	-	960
% Lights	100%	94.6%	100%	0%	**95.2%**	-	100%	95.1%	97.2%	0%	**95.3%**	-	0%	0%	0%	0%	**-**	-	96.9%	100%	100%	0%	**98.3%**	-	95.6%
Articulated Trucks	0	2	0	0	**2**	-	0	3	0	0	**3**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	5
% Articulated Trucks	0%	0.6%	0%	0%	**0.5%**	-	0%	0.7%	0%	0%	**0.6%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0.5%
Buses and Single-Unit Trucks	0	17	0	0	**17**	-	0	19	1	0	**20**	-	0	0	0	0	**0**	-	2	0	0	0	**2**	-	39
% Buses and Single-Unit Trucks	0%	4.8%	0%	0%	**4.3%**	-	0%	4.2%	2.8%	0%	**4.1%**	-	0%	0%	0%	0%	**-**	-	3.1%	0%	0%	0%	**1.7%**	-	3.9%
Pedestrians	-	-	-	-	-	21	-	-	-	-	-	35	-	-	-	-	-	20	-	-	-	-	-	18	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	92.1%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	7.9%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

1. North Avenue & Eastman Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
Forced Peak (Sep 21 2023 4PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111136, Location: 40.655757, -74.305411, Site Code: 1

Leg	North Avenue						North Avenue						Eastman Avenue						Eastman Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2023-09-21 4:00PM	3	81	14	0	**98**	5	3	124	11	0	**138**	10	0	0	0	0	**0**	5	11	11	0	0	**22**	11	**258**
4:15PM	2	98	10	0	**110**	3	1	114	9	0	**124**	6	0	0	0	0	**0**	0	9	18	0	0	**27**	4	**261**
4:30PM	2	94	10	0	**106**	6	2	97	8	0	**107**	10	0	0	0	0	**0**	1	18	5	0	0	**23**	7	**236**
4:45PM	0	89	14	0	**103**	3	3	121	9	0	**133**	13	0	0	0	0	**0**	8	6	21	0	0	**27**	3	**263**
Total	7	362	48	0	**417**	17	9	456	37	0	**502**	39	0	0	0	0	**0**	14	44	55	0	0	**99**	25	**1018**
% Approach	1.7%	86.8%	11.5%	0%	**-**	-	1.8%	90.8%	7.4%	0%	**-**	-	0%	0%	0%	0%	**-**	-	44.4%	55.6%	0%	0%	**-**	-	**-**
% Total	0.7%	35.6%	4.7%	0%	**41.0%**	-	0.9%	44.8%	3.6%	0%	**49.3%**	-	0%	0%	0%	0%	**0%**	-	4.3%	5.4%	0%	0%	**9.7%**	-	**-**
PHF	0.583	0.923	0.857	-	**0.948**	-	0.750	0.919	0.841	-	**0.909**	-	-	-	-	-	**-**	-	0.611	0.655	-	-	**0.917**	-	0.968
Lights	6	352	48	0	**406**	-	9	453	36	0	**498**	-	0	0	0	0	**0**	-	44	55	0	0	**99**	-	1003
% Lights	85.7%	97.2%	100%	0%	**97.4%**	-	100%	99.3%	97.3%	0%	**99.2%**	-	0%	0%	0%	0%	**-**	-	100%	100%	0%	0%	**100%**	-	98.5%
Articulated Trucks	0	1	0	0	**1**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1
% Articulated Trucks	0%	0.3%	0%	0%	**0.2%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	1	9	0	0	**10**	-	0	3	1	0	**4**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	14
% Buses and Single-Unit Trucks	14.3%	2.5%	0%	0%	**2.4%**	-	0%	0.7%	2.7%	0%	**0.8%**	-	0%	0%	0%	0%	**-**	-	0%	0%	0%	0%	**0%**	-	1.4%
Pedestrians	-	-	-	-	-	15	-	-	-	-	-	38	-	-	-	-	-	13	-	-	-	-	-	24	
% Pedestrians	-	-	-	-	-	88.2%	-	-	-	-	-	97.4%	-	-	-	-	-	92.9%	-	-	-	-	-	96.0%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	11.8%	-	-	-	-	-	2.6%	-	-	-	-	-	7.1%	-	-	-	-	-	4.0%	-

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

1. North Avenue & Eastman Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Sat Sep 23, 2023
Forced Peak (Sep 23 2023 11AM - 12 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111136, Location: 40.655757, -74.305411, Site Code: 1

Leg	North Avenue						North Avenue						Eastman Avenue						Eastman Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2023-09-23 11:00AM	2	71	10	0	**83**	10	2	91	15	0	**108**	6	0	0	0	2	**2**	4	5	9	0	0	**14**	20	**207**
11:15AM	4	77	13	0	**94**	14	7	99	23	0	**129**	12	0	0	0	3	**3**	7	14	10	2	0	**26**	31	**252**
11:30AM	4	78	19	0	**101**	11	4	78	16	0	**98**	20	0	0	0	1	**1**	5	13	8	0	0	**21**	21	**221**
11:45AM	2	76	9	0	**87**	12	4	81	16	0	**101**	4	0	0	1	0	**1**	4	10	13	2	0	**25**	37	**214**
Total	12	302	51	0	**365**	47	17	349	70	0	**436**	42	0	0	1	6	**7**	20	42	40	4	0	**86**	109	**894**
% Approach	3.3%	82.7%	14.0%	0%	**-**	-	3.9%	80.0%	16.1%	0%	**-**	-	0%	0%	14.3%	85.7%	**-**	-	48.8%	46.5%	4.7%	0%	**-**	-	-
% Total	1.3%	33.8%	5.7%	0%	**40.8%**	-	1.9%	39.0%	7.8%	0%	**48.8%**	-	0%	0%	0.1%	0.7%	**0.8%**	-	4.7%	4.5%	0.4%	0%	**9.6%**	-	-
PHF	0.750	0.968	0.671	-	**0.903**	-	0.607	0.881	0.761	-	**0.845**	-	-	-	0.250	0.500	**0.583**	-	0.750	0.769	0.500	-	**0.827**	-	0.887
Lights	12	297	51	0	**360**	-	17	343	69	0	**429**	-	0	0	1	6	**7**	-	42	40	4	0	**86**	-	882
% Lights	100%	98.3%	100%	0%	**98.6%**	-	100%	98.3%	98.6%	0%	**98.4%**	-	0%	0%	100%	100%	**100%**	-	100%	100%	100%	0%	**100%**	-	98.7%
Articulated Trucks	0	0	0	0	**0**	-	0	2	0	0	**2**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0.6%	0%	0%	**0.5%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.2%
Buses and Single-Unit Trucks	0	5	0	0	**5**	-	0	4	1	0	**5**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	10
% Buses and Single-Unit Trucks	0%	1.7%	0%	0%	**1.4%**	-	0%	1.1%	1.4%	0%	**1.1%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	1.1%
Pedestrians	-	-	-	-	-	47	-	-	-	-	-	42	-	-	-	-	-	20	-	-	-	-	-	109	
% 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

2. North Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM, 11 AM-1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111139, Location: 40.65583, -74.306427, Site Code: 2

Leg	North Avenue					North Avenue					Milnn Street					
Direction	Eastbound					Westbound					Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2023-09-21 7:00AM	24	96	0	**120**	0	125	0	0	**125**	3	4	26	0	**30**	3	**275**
7:15AM	16	92	0	**108**	0	106	0	0	**106**	2	0	18	0	**18**	3	**232**
7:30AM	16	97	0	**113**	0	99	3	0	**102**	1	2	15	0	**17**	4	**232**
7:45AM	30	87	0	**117**	0	132	0	0	**132**	0	6	15	0	**21**	2	**270**
Hourly Total	86	372	0	**458**	0	462	3	0	**465**	6	12	74	0	**86**	12	**1009**
8:00AM	22	84	0	**106**	0	106	4	0	**110**	0	2	18	0	**20**	6	**236**
8:15AM	20	84	0	**104**	0	117	0	0	**117**	2	2	12	0	**14**	1	**235**
8:30AM	18	89	0	**107**	0	108	2	0	**110**	1	3	14	0	**17**	3	**234**
8:45AM	22	73	0	**95**	0	97	0	0	**97**	0	0	18	0	**18**	2	**210**
Hourly Total	82	330	0	**412**	0	428	6	0	**434**	3	7	62	0	**69**	12	**915**
4:00PM	18	109	0	**127**	0	123	6	1	**130**	0	4	23	0	**27**	1	**284**
4:15PM	30	129	0	**159**	0	115	0	0	**115**	0	2	34	0	**36**	0	**310**
4:30PM	26	120	0	**146**	1	100	2	0	**102**	1	2	26	0	**28**	0	**276**
4:45PM	28	103	0	**131**	0	121	0	0	**121**	0	2	26	0	**28**	1	**280**
Hourly Total	102	461	0	**563**	1	459	8	1	**468**	1	10	109	0	**119**	2	**1150**
5:00PM	21	92	0	**113**	0	99	2	0	**101**	0	3	25	0	**28**	2	**242**
5:15PM	22	101	0	**123**	1	100	1	0	**101**	4	4	34	0	**38**	5	**262**
5:30PM	24	84	0	**108**	2	94	2	0	**96**	0	3	18	0	**21**	1	**225**
5:45PM	30	84	0	**114**	0	95	2	0	**97**	2	1	18	0	**19**	6	**230**
Hourly Total	97	361	0	**458**	3	388	7	0	**395**	6	11	95	0	**106**	14	**959**
2023-09-23 11:00AM	32	98	0	**130**	0	88	1	0	**89**	0	7	30	0	**37**	0	**256**
11:15AM	29	98	0	**127**	0	96	8	0	**104**	2	3	24	0	**27**	0	**258**
11:30AM	36	84	0	**120**	0	78	2	0	**80**	0	4	34	0	**38**	4	**238**
11:45AM	16	84	0	**100**	0	84	3	0	**87**	0	6	32	0	**38**	2	**225**
Hourly Total	113	364	0	**477**	0	346	14	0	**360**	2	20	120	0	**140**	6	**977**
12:00PM	24	90	0	**114**	0	73	5	0	**78**	0	3	21	0	**24**	4	**216**
12:15PM	14	84	0	**98**	0	83	3	0	**86**	0	2	28	0	**30**	2	**214**
12:30PM	22	96	0	**118**	0	117	1	0	**118**	0	3	29	0	**32**	2	**268**
12:45PM	18	80	0	**98**	0	79	5	0	**84**	1	3	18	0	**21**	4	**203**
Hourly Total	78	350	0	**428**	0	352	14	0	**366**	1	11	96	0	**107**	12	**901**
Total	558	2238	0	**2796**	4	2435	52	1	**2488**	19	71	556	0	**627**	58	**5911**
% Approach	20.0%	80.0%	0%	**-**	-	97.9%	2.1%	0%	**-**	-	11.3%	88.7%	0%	**-**	-	-
% Total	9.4%	37.9%	0%	**47.3%**	-	41.2%	0.9%	0%	**42.1%**	-	1.2%	9.4%	0%	**10.6%**	-	-
Lights	546	2170	0	**2716**	-	2366	52	1	**2419**	-	67	548	0	**615**	-	5750
% Lights	97.8%	97.0%	0%	**97.1%**	-	97.2%	100%	100%	**97.2%**	-	94.4%	98.6%	0%	**98.1%**	-	97.3%
Articulated Trucks	1	9	0	**10**	-	8	0	0	**8**	-	0	2	0	**2**	-	20
% Articulated Trucks	0.2%	0.4%	0%	**0.4%**	-	0.3%	0%	0%	**0.3%**	-	0%	0.4%	0%	**0.3%**	-	0.3%
Buses and Single-Unit Trucks	11	59	0	**70**	-	61	0	0	**61**	-	4	6	0	**10**	-	141

Leg Direction	North Avenue Eastbound					North Avenue Westbound					Milnn Street Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
% Buses and Single-Unit Trucks	2.0%	2.6%	0%	**2.5%**	-	2.5%	0%	0%	**2.5%**	-	5.6%	1.1%	0%	**1.6%**	-	2.4%
Pedestrians	-	-	-	-	3	-	-	-	-	19	-	-	-	-	56	
% Pedestrians	-	-	-	-	75.0%	-	-	-	-	100%	-	-	-	-	96.6%	-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	0	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	25.0%	-	-	-	-	0%	-	-	-	-	3.4%	-

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

2. North Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
Forced Peak (Sep 21 2023 7:45AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111139, Location: 40.65583, -74.306427, Site Code: 2

Leg	North Avenue					North Avenue					Milnn Street					
Direction	Eastbound					Westbound					Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2023-09-21 7:45AM	30	87	0	**117**	0	132	0	0	**132**	0	6	15	0	**21**	2	**270**
8:00AM	22	84	0	**106**	0	106	4	0	**110**	0	2	18	0	**20**	6	**236**
8:15AM	20	84	0	**104**	0	117	0	0	**117**	2	2	12	0	**14**	1	**235**
8:30AM	18	89	0	**107**	0	108	2	0	**110**	1	3	14	0	**17**	3	**234**
Total	90	344	0	**434**	0	463	6	0	**469**	3	13	59	0	**72**	12	**975**
% Approach	20.7%	79.3%	0%	**-**	-	98.7%	1.3%	0%	**-**	-	18.1%	81.9%	0%	**-**	-	-
% Total	9.2%	35.3%	0%	**44.5%**	-	47.5%	0.6%	0%	**48.1%**	-	1.3%	6.1%	0%	**7.4%**	-	-
PHF	0.750	0.966	-	**0.927**	-	0.877	0.375	-	**0.888**	-	0.542	0.819	-	**0.857**	-	0.903
Lights	85	319	0	**404**	-	440	6	0	**446**	-	13	57	0	**70**	-	920
% Lights	94.4%	92.7%	0%	**93.1%**	-	95.0%	100%	0%	**95.1%**	-	100%	96.6%	0%	**97.2%**	-	94.4%
Articulated Trucks	1	3	0	**4**	-	3	0	0	**3**	-	0	0	0	**0**	-	7
% Articulated Trucks	1.1%	0.9%	0%	**0.9%**	-	0.6%	0%	0%	**0.6%**	-	0%	0%	0%	**0%**	-	0.7%
Buses and Single-Unit Trucks	4	22	0	**26**	-	20	0	0	**20**	-	0	2	0	**2**	-	48
% Buses and Single-Unit Trucks	4.4%	6.4%	0%	**6.0%**	-	4.3%	0%	0%	**4.3%**	-	0%	3.4%	0%	**2.8%**	-	4.9%
Pedestrians	-	-	-	-	0	-	-	-	-	3	-	-	-	-	11	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	91.7%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	8.3%	-

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

2. North Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
PM Peak (Sep 21 2023 4PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111139, Location: 40.65583, -74.306427, Site Code: 2

Leg	North Avenue					North Avenue					Milnn Street					
Direction	Eastbound					Westbound					Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2023-09-21 4:00PM	18	109	0	**127**	0	123	6	1	**130**	0	4	23	0	**27**	1	**284**
4:15PM	30	129	0	**159**	0	115	0	0	**115**	0	2	34	0	**36**	0	**310**
4:30PM	26	120	0	**146**	1	100	2	0	**102**	1	2	26	0	**28**	0	**276**
4:45PM	28	103	0	**131**	0	121	0	0	**121**	0	2	26	0	**28**	1	**280**
Total	102	461	0	**563**	1	459	8	1	**468**	1	10	109	0	**119**	2	**1150**
% Approach	18.1%	81.9%	0%	**-**	-	98.1%	1.7%	0.2%	**-**	-	8.4%	91.6%	0%	**-**	-	-
% Total	8.9%	40.1%	0%	**49.0%**	-	39.9%	0.7%	0.1%	**40.7%**	-	0.9%	9.5%	0%	**10.3%**	-	-
PHF	0.850	0.893	-	**0.885**	-	0.933	0.333	0.250	**0.900**	-	0.625	0.801	-	**0.826**	-	0.927
Lights	100	452	0	**552**	-	457	8	1	**466**	-	9	107	0	**116**	-	1134
% Lights	98.0%	98.0%	0%	**98.0%**	-	99.6%	100%	100%	**99.6%**	-	90.0%	98.2%	0%	**97.5%**	-	98.6%
Articulated Trucks	0	2	0	**2**	-	0	0	0	**0**	-	0	0	0	**0**	-	2
% Articulated Trucks	0%	0.4%	0%	**0.4%**	-	0%	0%	0%	**0%**	-	0%	0%	0%	**0%**	-	0.2%
Buses and Single-Unit Trucks	2	7	0	**9**	-	2	0	0	**2**	-	1	2	0	**3**	-	14
% Buses and Single-Unit Trucks	2.0%	1.5%	0%	**1.6%**	-	0.4%	0%	0%	**0.4%**	-	10.0%	1.8%	0%	**2.5%**	-	1.2%
Pedestrians	-	-	-	-	1	-	-	-	-	1	-	-	-	-	2	
% Pedestrians	-	-	-	-	100%	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-

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

2. North Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Sat Sep 23, 2023
Midday Peak (WKND) (Sep 23 2023 11AM - 12 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111139, Location: 40.65583, -74.306427, Site Code: 2

Leg	North Avenue					North Avenue					Milnn Street					
Direction	Eastbound					Westbound					Southbound					
Time	L	T	U	**App**	Ped*	T	R	U	**App**	Ped*	L	R	U	**App**	Ped*	**Int**
2023-09-23 11:00AM	32	98	0	**130**	0	88	1	0	**89**	0	7	30	0	**37**	0	**256**
11:15AM	29	98	0	**127**	0	96	8	0	**104**	2	3	24	0	**27**	0	**258**
11:30AM	36	84	0	**120**	0	78	2	0	**80**	0	4	34	0	**38**	4	**238**
11:45AM	16	84	0	**100**	0	84	3	0	**87**	0	6	32	0	**38**	2	**225**
Total	113	364	0	**477**	0	346	14	0	**360**	2	20	120	0	**140**	6	**977**
% Approach	23.7%	76.3%	0%	**-**	-	96.1%	3.9%	0%	**-**	-	14.3%	85.7%	0%	**-**	-	**-**
% Total	11.6%	37.3%	0%	**48.8%**	-	35.4%	1.4%	0%	**36.8%**	-	2.0%	12.3%	0%	**14.3%**	-	**-**
PHF	0.785	0.929	-	**0.917**	-	0.901	0.438	-	**0.865**	-	0.714	0.882	-	**0.921**	-	0.947
Lights	112	359	0	**471**	-	340	14	0	**354**	-	19	120	0	**139**	-	964
% Lights	99.1%	98.6%	0%	**98.7%**	-	98.3%	100%	0%	**98.3%**	-	95.0%	100%	0%	**99.3%**	-	98.7%
Articulated Trucks	0	0	0	**0**	-	1	0	0	**1**	-	0	0	0	**0**	-	1
% Articulated Trucks	0%	0%	0%	**0%**	-	0.3%	0%	0%	**0.3%**	-	0%	0%	0%	**0%**	-	0.1%
Buses and Single-Unit Trucks	1	5	0	**6**	-	5	0	0	**5**	-	1	0	0	**1**	-	12
% Buses and Single-Unit Trucks	0.9%	1.4%	0%	**1.3%**	-	1.4%	0%	0%	**1.4%**	-	5.0%	0%	0%	**0.7%**	-	1.2%
Pedestrians	-	-	-	-	0	-	-	-	-	2	-	-	-	-	6	
% Pedestrians	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	0%	-

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

3. Eastman Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM, 11 AM-1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111660, Location: 40.656171, -74.306153, Site Code: 3

Leg	Eastman Street						Eastman Street						Miln Street						Miln Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
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
2023-09-21 7:00AM	0	7	6	0	**13**	0	3	3	0	0	**6**	0	0	5	0	0	**5**	1	4	4	0	0	**8**	1	**32**
7:15AM	4	8	4	0	**16**	4	3	2	4	0	**9**	0	1	4	0	0	**5**	3	2	5	1	0	**8**	5	**38**
7:30AM	2	14	2	0	**18**	0	1	3	1	0	**5**	4	4	13	0	0	**17**	2	4	12	5	0	**21**	7	**61**
7:45AM	11	45	6	0	**62**	1	0	3	3	0	**6**	0	5	20	0	0	**25**	0	6	19	13	0	**38**	7	**131**
Hourly Total	17	74	18	0	**109**	5	7	11	8	0	**26**	4	10	42	0	0	**52**	6	16	40	19	0	**75**	20	**262**
8:00AM	3	26	6	0	**35**	1	1	4	7	0	**12**	0	5	20	0	0	**25**	7	5	19	2	0	**26**	4	**98**
8:15AM	6	12	2	0	**20**	3	1	2	2	0	**5**	0	1	14	0	1	**16**	2	7	14	5	0	**26**	2	**67**
8:30AM	7	17	4	0	**28**	3	3	3	3	0	**9**	1	3	12	2	0	**17**	7	5	14	5	0	**24**	1	**78**
8:45AM	4	9	4	0	**17**	1	1	3	1	0	**5**	3	4	26	0	0	**30**	1	5	13	11	0	**29**	3	**81**
Hourly Total	20	64	16	0	**100**	8	6	12	13	0	**31**	4	13	72	2	1	**88**	17	22	60	23	0	**105**	10	**324**
4:00PM	5	19	1	0	**25**	6	3	6	7	0	**16**	1	3	19	1	0	**23**	9	6	24	4	1	**35**	5	**99**
4:15PM	7	21	8	0	**36**	11	3	5	2	0	**10**	10	4	26	2	0	**32**	11	11	11	11	0	**33**	19	**111**
4:30PM	5	17	6	0	**28**	7	1	1	4	0	**6**	3	2	22	0	0	**24**	7	5	22	7	0	**34**	14	**92**
4:45PM	5	17	3	0	**25**	7	2	5	6	0	**13**	2	2	24	0	0	**26**	3	14	26	5	0	**45**	5	**109**
Hourly Total	22	74	18	0	**114**	31	9	17	19	0	**45**	16	11	91	3	0	**105**	30	36	83	27	1	**147**	43	**411**
5:00PM	9	21	4	0	**34**	0	4	3	11	0	**18**	1	4	19	2	0	**25**	0	5	19	5	0	**29**	2	**106**
5:15PM	14	31	5	0	**50**	1	2	1	10	0	**13**	1	2	28	1	0	**31**	2	7	29	3	0	**39**	9	**133**
5:30PM	8	31	5	0	**44**	5	1	3	6	0	**10**	0	2	26	0	0	**28**	1	5	21	8	0	**34**	8	**116**
5:45PM	9	31	11	0	**51**	2	2	5	4	0	**11**	1	4	23	0	0	**27**	1	6	15	8	0	**29**	18	**118**
Hourly Total	40	114	25	0	**179**	8	9	12	31	0	**52**	3	12	96	3	0	**111**	4	23	84	24	0	**131**	37	**473**
2023-09-23 11:00AM	7	10	5	0	**22**	0	4	1	11	0	**16**	4	4	29	1	0	**34**	4	9	18	8	0	**35**	2	**107**
11:15AM	15	10	6	0	**31**	4	8	3	10	0	**21**	1	4	19	1	0	**24**	2	14	14	3	0	**31**	4	**107**
11:30AM	8	4	4	0	**16**	5	5	1	13	0	**19**	7	4	31	2	1	**38**	4	14	30	11	0	**55**	6	**128**
11:45AM	8	15	8	0	**31**	2	4	3	17	0	**24**	2	0	27	1	0	**28**	2	9	16	5	0	**30**	6	**113**
Hourly Total	38	39	23	0	**100**	11	21	8	51	0	**80**	14	12	106	5	1	**124**	12	46	78	27	0	**151**	18	**455**
12:00PM	5	8	11	0	**24**	3	4	2	14	0	**20**	5	1	33	0	0	**34**	0	7	22	5	0	**34**	14	**112**
12:15PM	6	8	4	0	**18**	9	3	3	21	0	**27**	9	5	26	5	0	**36**	5	11	20	9	0	**40**	16	**121**
12:30PM	15	19	9	0	**43**	2	8	6	7	0	**21**	5	5	31	0	0	**36**	2	13	24	6	0	**43**	13	**143**
12:45PM	9	11	7	0	**27**	3	3	3	15	0	**21**	7	6	15	1	0	**22**	1	11	27	6	0	**44**	22	**114**
Hourly Total	35	46	31	0	**112**	17	18	14	57	0	**89**	26	17	105	6	0	**128**	8	42	93	26	0	**161**	65	**490**
Total	172	411	131	0	**714**	80	70	74	179	0	**323**	67	75	512	19	2	**608**	77	185	438	146	1	**770**	193	**2415**
% Approach	24.1%	57.6%	18.3%	0%	**-**	-	21.7%	22.9%	55.4%	0%	**-**	-	12.3%	84.2%	3.1%	0.3%	**-**	-	24.0%	56.9%	19.0%	0.1%	**-**	-	-
% Total	7.1%	17.0%	5.4%	0%	**29.6%**	-	2.9%	3.1%	7.4%	0%	**13.4%**	-	3.1%	21.2%	0.8%	0.1%	**25.2%**	-	7.7%	18.1%	6.0%	0%	**31.9%**	-	-
Lights	169	408	120	0	**697**	-	67	71	176	0	**314**	-	73	503	17	2	**595**	-	181	430	139	1	**751**	-	2357
% Lights	98.3%	99.3%	91.6%	0%	**97.6%**	-	95.7%	95.9%	98.3%	0%	**97.2%**	-	97.3%	98.2%	89.5%	100%	**97.9%**	-	97.8%	98.2%	95.2%	100%	**97.5%**	-	97.6%
Articulated Trucks	0	0	2	0	**2**	-	1	0	0	0	**1**	-	0	3	0	0	**3**	-	1	1	1	0	**3**	-	9
% Articulated Trucks	0%	0%	1.5%	0%	**0.3%**	-	1.4%	0%	0%	0%	**0.3%**	-	0%	0.6%	0%	0%	**0.5%**	-	0.5%	0.2%	0.7%	0%	**0.4%**	-	0.4%
Buses and Single-Unit Trucks	3	3	9	0	**15**	-	2	3	3	0	**8**	-	2	6	2	0	**10**	-	3	7	6	0	**16**	-	49

Leg	Eastman Street						Eastman Street						Miln Street						Miln Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
% Buses and Single-Unit Trucks	1.7%	0.7%	6.9%	0%	**2.1%**	-	2.9%	4.1%	1.7%	0%	**2.5%**	-	2.7%	1.2%	10.5%	0%	**1.6%**	-	1.6%	1.6%	4.1%	0%	**2.1%**	-	2.0%
Pedestrians	-	-	-	-	-	79	-	-	-	-	-	62	-	-	-	-	-	74	-	-	-	-	-	173	
% Pedestrians	-	-	-	-	-	98.8%	-	-	-	-	-	92.5%	-	-	-	-	-	96.1%	-	-	-	-	-	89.6%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	3	-	-	-	-	-	20	
% Bicycles on Crosswalk	-	-	-	-	-	1.3%	-	-	-	-	-	7.5%	-	-	-	-	-	3.9%	-	-	-	-	-	10.4%	-

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

3. Eastman Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
AM Peak (Sep 21 2023 7:45AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111660, Location: 40.656171, -74.306153, Site Code: 3

Leg	Eastman Street						Eastman Street						Miln Street						Miln Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2023-09-21 7:45AM	11	45	6	0	**62**	1	0	3	3	0	**6**	0	5	20	0	0	**25**	0	6	19	13	0	**38**	7	**131**
8:00AM	3	26	6	0	**35**	1	1	4	7	0	**12**	0	5	20	0	0	**25**	7	5	19	2	0	**26**	4	**98**
8:15AM	6	12	2	0	**20**	3	1	2	2	0	**5**	0	1	14	0	1	**16**	2	7	14	5	0	**26**	2	**67**
8:30AM	7	17	4	0	**28**	3	3	3	3	0	**9**	1	3	12	2	0	**17**	7	5	14	5	0	**24**	1	**78**
Total	27	100	18	0	**145**	8	5	12	15	0	**32**	1	14	66	2	1	**83**	16	23	66	25	0	**114**	14	**374**
% Approach	18.6%	69.0%	12.4%	0%	**-**	-	15.6%	37.5%	46.9%	0%	**-**	-	16.9%	79.5%	2.4%	1.2%	**-**	-	20.2%	57.9%	21.9%	0%	**-**	-	-
% Total	7.2%	26.7%	4.8%	0%	**38.8%**	-	1.3%	3.2%	4.0%	0%	**8.6%**	-	3.7%	17.6%	0.5%	0.3%	**22.2%**	-	6.1%	17.6%	6.7%	0%	**30.5%**	-	-
PHF	0.614	0.556	0.750	-	**0.585**	-	0.417	0.750	0.536	-	**0.667**	-	0.700	0.825	0.250	0.250	**0.830**	-	0.821	0.868	0.481	-	**0.750**	-	0.714
Lights	27	100	17	0	**144**	-	5	12	15	0	**32**	-	14	65	2	1	**82**	-	21	66	24	0	**111**	-	369
% Lights	100%	100%	94.4%	0%	**99.3%**	-	100%	100%	100%	0%	**100%**	-	100%	98.5%	100%	100%	**98.8%**	-	91.3%	100%	96.0%	0%	**97.4%**	-	98.7%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	1
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	4.3%	0%	0%	0%	**0.9%**	-	0.3%
Buses and Single-Unit Trucks	0	0	1	0	**1**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	1	0	1	0	**2**	-	4
% Buses and Single-Unit Trucks	0%	0%	5.6%	0%	**0.7%**	-	0%	0%	0%	0%	**0%**	-	0%	1.5%	0%	0%	**1.2%**	-	4.3%	0%	4.0%	0%	**1.8%**	-	1.1%
Pedestrians	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	16	-	-	-	-	-	12	
% Pedestrians	-	-	-	-	-	87.5%	-	-	-	-	-	0%	-	-	-	-	-	100%	-	-	-	-	-	85.7%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	12.5%	-	-	-	-	-	100%	-	-	-	-	-	0%	-	-	-	-	-	14.3%	-

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

3. Eastman Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Sep 21, 2023
Forced Peak (Sep 21 2023 4PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111660, Location: 40.656171, -74.306153, Site Code: 3

Leg	Eastman Street						Eastman Street						Miln Street						Miln Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2023-09-21 4:00PM	5	19	1	0	**25**	6	3	6	7	0	**16**	1	3	19	1	0	**23**	9	6	24	4	1	**35**	5	**99**
4:15PM	7	21	8	0	**36**	11	3	5	2	0	**10**	10	4	26	2	0	**32**	11	11	11	11	0	**33**	19	**111**
4:30PM	5	17	6	0	**28**	7	1	1	4	0	**6**	3	2	22	0	0	**24**	7	5	22	7	0	**34**	14	**92**
4:45PM	5	17	3	0	**25**	7	2	5	6	0	**13**	2	2	24	0	0	**26**	3	14	26	5	0	**45**	5	**109**
Total	22	74	18	0	**114**	31	9	17	19	0	**45**	16	11	91	3	0	**105**	30	36	83	27	1	**147**	43	**411**
% Approach	19.3%	64.9%	15.8%	0%	**-**	-	20.0%	37.8%	42.2%	0%	**-**	-	10.5%	86.7%	2.9%	0%	**-**	-	24.5%	56.5%	18.4%	0.7%	**-**	-	-
% Total	5.4%	18.0%	4.4%	0%	**27.7%**	-	2.2%	4.1%	4.6%	0%	**10.9%**	-	2.7%	22.1%	0.7%	0%	**25.5%**	-	8.8%	20.2%	6.6%	0.2%	**35.8%**	-	-
PHF	0.786	0.881	0.563	-	**0.792**	-	0.750	0.708	0.679	-	**0.703**	-	0.688	0.875	0.375	-	**0.820**	-	0.643	0.798	0.614	0.250	**0.817**	-	0.926
Lights	22	74	13	0	**109**	-	8	16	18	0	**42**	-	11	89	2	0	**102**	-	35	80	23	1	**139**	-	392
% Lights	100%	100%	72.2%	0%	**95.6%**	-	88.9%	94.1%	94.7%	0%	**93.3%**	-	100%	97.8%	66.7%	0%	**97.1%**	-	97.2%	96.4%	85.2%	100%	**94.6%**	-	95.4%
Articulated Trucks	0	0	1	0	**1**	-	0	0	0	0	**0**	-	0	1	0	0	**1**	-	0	1	1	0	**2**	-	4
% Articulated Trucks	0%	0%	5.6%	0%	**0.9%**	-	0%	0%	0%	0%	**0%**	-	0%	1.1%	0%	0%	**1.0%**	-	0%	1.2%	3.7%	0%	**1.4%**	-	1.0%
Buses and Single-Unit Trucks	0	0	4	0	**4**	-	1	1	1	0	**3**	-	0	1	1	0	**2**	-	1	2	3	0	**6**	-	15
% Buses and Single-Unit Trucks	0%	0%	22.2%	0%	**3.5%**	-	11.1%	5.9%	5.3%	0%	**6.7%**	-	0%	1.1%	33.3%	0%	**1.9%**	-	2.8%	2.4%	11.1%	0%	**4.1%**	-	3.6%
Pedestrians	-	-	-	-	-	31	-	-	-	-	-	13	-	-	-	-	-	28	-	-	-	-	-	32	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	81.3%	-	-	-	-	-	93.3%	-	-	-	-	-	74.4%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	11	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	18.8%	-	-	-	-	-	6.7%	-	-	-	-	-	25.6%	-

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

3. Eastman Avenue & Miln Street - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Sat Sep 23, 2023
Forced Peak (Sep 23 2023 11AM - 12 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1111660, Location: 40.656171, -74.306153, Site Code: 3

Leg	Eastman Street						Eastman Street						Miln Street						Miln Street						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2023-09-23 11:00AM	7	10	5	0	**22**	0	4	1	11	0	**16**	4	4	29	1	0	**34**	4	9	18	8	0	**35**	2	**107**
11:15AM	15	10	6	0	**31**	4	8	3	10	0	**21**	1	4	19	1	0	**24**	2	14	14	3	0	**31**	4	**107**
11:30AM	8	4	4	0	**16**	5	5	1	13	0	**19**	7	4	31	2	1	**38**	4	14	30	11	0	**55**	6	**128**
11:45AM	8	15	8	0	**31**	2	4	3	17	0	**24**	2	0	27	1	0	**28**	2	9	16	5	0	**30**	6	**113**
Total	38	39	23	0	**100**	11	21	8	51	0	**80**	14	12	106	5	1	**124**	12	46	78	27	0	**151**	18	**455**
% Approach	38.0%	39.0%	23.0%	0%	**-**	-	26.3%	10.0%	63.8%	0%	**-**	-	9.7%	85.5%	4.0%	0.8%	**-**	-	30.5%	51.7%	17.9%	0%	**-**	-	-
% Total	8.4%	8.6%	5.1%	0%	**22.0%**	-	4.6%	1.8%	11.2%	0%	**17.6%**	-	2.6%	23.3%	1.1%	0.2%	**27.3%**	-	10.1%	17.1%	5.9%	0%	**33.2%**	-	-
PHF	0.633	0.650	0.719	-	**0.806**	-	0.656	0.667	0.750	-	**0.833**	-	0.750	0.855	0.625	0.250	**0.816**	-	0.821	0.650	0.614	-	**0.686**	-	0.889
Lights	37	38	22	0	**97**	-	21	8	50	0	**79**	-	11	106	5	1	**123**	-	46	76	27	0	**149**	-	448
% Lights	97.4%	97.4%	95.7%	0%	**97.0%**	-	100%	100%	98.0%	0%	**98.8%**	-	91.7%	100%	100%	100%	**99.2%**	-	100%	97.4%	100%	0%	**98.7%**	-	98.5%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	1	1	1	0	**3**	-	0	0	1	0	**1**	-	1	0	0	0	**1**	-	0	2	0	0	**2**	-	7
% Buses and Single-Unit Trucks	2.6%	2.6%	4.3%	0%	**3.0%**	-	0%	0%	2.0%	0%	**1.3%**	-	8.3%	0%	0%	0%	**0.8%**	-	0%	2.6%	0%	0%	**1.3%**	-	1.5%
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	14	-	-	-	-	-	12	-	-	-	-	-	15	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	83.3%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	16.7%	-

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

1. North Avenue & N. Union Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Mar 21, 2024
Full Length (7 AM-9 AM, 4 PM-6 PM, 11 AM-1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1167483, Location: 40.65575, -74.304294, Site Code: 1

Leg	North Avenue West						North Avenue West						North Union Avenue						North Union Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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
2024-03-21 7:00AM	3	51	8	0	**62**	1	30	89	1	0	**120**	2	0	52	12	0	**64**	5	1	20	5	0	**26**	2	**272**
7:15AM	0	65	12	0	**77**	0	26	96	0	1	**123**	1	0	84	23	0	**107**	1	2	47	6	0	**55**	1	**362**
7:30AM	4	56	15	0	**75**	6	33	95	0	0	**128**	2	0	93	25	0	**118**	9	5	46	5	0	**56**	5	**377**
7:45AM	3	72	21	0	**96**	0	38	128	0	0	**166**	2	0	91	18	0	**109**	1	0	51	12	0	**63**	1	**434**
Hourly Total	10	244	56	0	**310**	7	127	408	1	1	**537**	7	0	320	78	0	**398**	16	8	164	28	0	**200**	9	**1445**
8:00AM	5	94	15	0	**114**	1	34	133	0	1	**168**	1	0	93	22	0	**115**	1	0	55	15	0	**70**	1	**467**
8:15AM	6	85	18	0	**109**	4	47	136	5	0	**188**	2	1	63	21	0	**85**	3	2	42	5	0	**49**	2	**431**
8:30AM	1	81	16	0	**98**	5	41	104	5	0	**150**	1	0	62	21	0	**83**	7	2	71	8	0	**81**	2	**412**
8:45AM	2	80	17	0	**99**	8	36	120	3	0	**159**	2	0	94	19	0	**113**	1	4	48	12	0	**64**	4	**435**
Hourly Total	14	340	66	0	**420**	18	158	493	13	1	**665**	6	1	312	83	0	**396**	12	8	216	40	0	**264**	9	**1745**
4:00PM	9	66	19	0	**94**	12	44	134	2	0	**180**	3	0	76	24	0	**100**	3	1	61	15	0	**77**	3	**451**
4:15PM	3	87	17	0	**107**	7	38	120	2	0	**160**	0	0	95	11	0	**106**	2	0	72	16	0	**88**	7	**461**
4:30PM	5	87	9	0	**101**	10	48	127	1	0	**176**	2	0	84	18	0	**102**	7	0	59	11	0	**70**	6	**449**
4:45PM	8	82	20	0	**110**	8	56	117	1	0	**174**	4	0	96	11	0	**107**	2	2	92	11	0	**105**	4	**496**
Hourly Total	25	322	65	0	**412**	37	186	498	6	0	**690**	9	0	351	64	0	**415**	14	3	284	53	0	**340**	20	**1857**
5:00PM	6	87	5	0	**98**	14	56	118	3	0	**177**	9	0	81	15	0	**96**	14	0	80	12	0	**92**	5	**463**
5:15PM	5	99	2	0	**106**	6	56	110	0	0	**166**	0	0	86	12	0	**98**	3	0	81	15	0	**96**	1	**466**
5:30PM	4	97	1	0	**102**	8	34	121	1	0	**156**	10	0	83	20	0	**103**	5	1	73	16	0	**90**	12	**451**
5:45PM	4	107	2	0	**113**	10	51	113	4	0	**168**	4	0	92	13	0	**105**	4	0	76	12	0	**88**	7	**474**
Hourly Total	19	390	10	0	**419**	38	197	462	8	0	**667**	23	0	342	60	0	**402**	26	1	310	55	0	**366**	25	**1854**
2024-03-23 11:00AM	17	67	12	0	**96**	1	43	88	8	1	**140**	13	0	72	14	0	**86**	6	2	47	23	0	**72**	2	**394**
11:15AM	10	55	22	0	**87**	0	40	95	4	0	**139**	8	1	69	21	0	**91**	4	1	43	20	0	**64**	3	**381**
11:30AM	8	52	16	0	**76**	2	41	97	7	1	**146**	3	0	61	23	0	**84**	3	1	44	15	0	**60**	3	**366**
11:45AM	12	58	15	0	**85**	7	32	108	6	1	**147**	4	0	77	13	0	**90**	5	2	57	20	0	**79**	7	**401**
Hourly Total	47	232	65	0	**344**	10	156	388	25	3	**572**	28	1	279	71	0	**351**	18	6	191	78	0	**275**	15	**1542**
12:00PM	17	71	11	0	**99**	3	38	100	11	0	**149**	3	1	69	23	0	**93**	11	0	47	25	0	**72**	6	**413**
12:15PM	16	77	9	0	**102**	2	40	83	12	2	**137**	6	0	85	16	0	**101**	3	1	46	19	0	**66**	0	**406**
12:30PM	8	72	19	0	**99**	2	40	86	9	0	**135**	12	0	64	17	0	**81**	2	2	59	23	0	**84**	8	**399**
12:45PM	15	58	17	0	**90**	3	49	79	13	1	**142**	3	1	75	12	0	**88**	2	2	61	14	0	**77**	9	**397**
Hourly Total	56	278	56	0	**390**	10	167	348	45	3	**563**	24	2	293	68	0	**363**	18	5	213	81	0	**299**	23	**1615**
Total	171	1806	318	0	**2295**	120	991	2597	98	8	**3694**	97	4	1897	424	0	**2325**	104	31	1378	335	0	**1744**	101	**10058**
% Approach	7.5%	78.7%	13.9%	0%	**-**	-	26.8%	70.3%	2.7%	0.2%	**-**	-	0.2%	81.6%	18.2%	0%	**-**	-	1.8%	79.0%	19.2%	0%	**-**	-	-
% Total	1.7%	18.0%	3.2%	0%	**22.8%**	-	9.9%	25.8%	1.0%	0.1%	**36.7%**	-	0%	18.9%	4.2%	0%	**23.1%**	-	0.3%	13.7%	3.3%	0%	**17.3%**	-	-
Lights	166	1756	316	0	**2238**	-	971	2535	96	8	**3610**	-	4	1863	408	0	**2275**	-	31	1356	330	0	**1717**	-	9840
% Lights	97.1%	97.2%	99.4%	0%	**97.5%**	-	98.0%	97.6%	98.0%	100%	**97.7%**	-	100%	98.2%	96.2%	0%	**97.8%**	-	100%	98.4%	98.5%	0%	**98.5%**	-	97.8%
Articulated Trucks	1	8	0	0	**9**	-	2	6	0	0	**8**	-	0	6	1	0	**7**	-	0	2	3	0	**5**	-	29
% Articulated Trucks	0.6%	0.4%	0%	0%	**0.4%**	-	0.2%	0.2%	0%	0%	**0.2%**	-	0%	0.3%	0.2%	0%	**0.3%**	-	0%	0.1%	0.9%	0%	**0.3%**	-	0.3%
Buses and Single-Unit Trucks	4	42	2	0	**48**	-	18	56	2	0	**76**	-	0	28	15	0	**43**	-	0	20	2	0	**22**	-	189

Leg Direction	North Avenue West Eastbound						North Avenue West Westbound						North Union Avenue Northbound						North Union Avenue Southbound						
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**
% Buses and Single-Unit Trucks	2.3%	2.3%	0.6%	0%	**2.1%**	-	1.8%	2.2%	2.0%	0%	**2.1%**	-	0%	1.5%	3.5%	0%	**1.8%**	-	0%	1.5%	0.6%	0%	**1.3%**	-	1.9%
Pedestrians	-	-	-	-	-	117	-	-	-	-	-	92	-	-	-	-	-	103	-	-	-	-	-	101	
% Pedestrians	-	-	-	-	-	97.5%	-	-	-	-	-	94.8%	-	-	-	-	-	99.0%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	5	-	-	-	-	-	1	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	2.5%	-	-	-	-	-	5.2%	-	-	-	-	-	1.0%	-	-	-	-	-	0%	-

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

1. North Avenue & N. Union Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Mar 21, 2024
Forced Peak (Mar 21 2024 7:45AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1167483, Location: 40.65575, -74.304294, Site Code: 1

Leg	North Avenue West						North Avenue West						North Union Avenue						North Union Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2024-03-21 7:45AM	3	72	21	0	**96**	0	38	128	0	0	**166**	2	0	91	18	0	**109**	1	0	51	12	0	**63**	1	**434**
8:00AM	5	94	15	0	**114**	1	34	133	0	1	**168**	1	0	93	22	0	**115**	1	0	55	15	0	**70**	1	**467**
8:15AM	6	85	18	0	**109**	4	47	136	5	0	**188**	2	1	63	21	0	**85**	3	2	42	5	0	**49**	2	**431**
8:30AM	1	81	16	0	**98**	5	41	104	5	0	**150**	1	0	62	21	0	**83**	7	2	71	8	0	**81**	2	**412**
Total	15	332	70	0	**417**	10	160	501	10	1	**672**	6	1	309	82	0	**392**	12	4	219	40	0	**263**	6	**1744**
% Approach	3.6%	79.6%	16.8%	0%	**-**	-	23.8%	74.6%	1.5%	0.1%	**-**	-	0.3%	78.8%	20.9%	0%	**-**	-	1.5%	83.3%	15.2%	0%	**-**	-	-
% Total	0.9%	19.0%	4.0%	0%	**23.9%**	-	9.2%	28.7%	0.6%	0.1%	**38.5%**	-	0.1%	17.7%	4.7%	0%	**22.5%**	-	0.2%	12.6%	2.3%	0%	**15.1%**	-	-
PHF	0.625	0.883	0.833	-	**0.914**	-	0.851	0.921	0.500	0.250	**0.894**	-	0.250	0.831	0.932	-	**0.852**	-	0.500	0.771	0.667	-	**0.812**	-	0.934
Lights	13	315	70	0	**398**	-	155	481	8	1	**645**	-	1	296	76	0	**373**	-	4	209	38	0	**251**	-	1667
% Lights	86.7%	94.9%	100%	0%	**95.4%**	-	96.9%	96.0%	80.0%	100%	**96.0%**	-	100%	95.8%	92.7%	0%	**95.2%**	-	100%	95.4%	95.0%	0%	**95.4%**	-	95.6%
Articulated Trucks	0	4	0	0	**4**	-	0	1	0	0	**1**	-	0	2	1	0	**3**	-	0	0	1	0	**1**	-	9
% Articulated Trucks	0%	1.2%	0%	0%	**1.0%**	-	0%	0.2%	0%	0%	**0.1%**	-	0%	0.6%	1.2%	0%	**0.8%**	-	0%	0%	2.5%	0%	**0.4%**	-	0.5%
Buses and Single-Unit Trucks	2	13	0	0	**15**	-	5	19	2	0	**26**	-	0	11	5	0	**16**	-	0	10	1	0	**11**	-	68
% Buses and Single-Unit Trucks	13.3%	3.9%	0%	0%	**3.6%**	-	3.1%	3.8%	20.0%	0%	**3.9%**	-	0%	3.6%	6.1%	0%	**4.1%**	-	0%	4.6%	2.5%	0%	**4.2%**	-	3.9%
Pedestrians	-	-	-	-	-	10	-	-	-	-	-	6	-	-	-	-	-	12	-	-	-	-	-	6	
% 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

1. North Avenue & N. Union Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Thu Mar 21, 2024
Forced Peak (Mar 21 2024 4PM - 5 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1167483, Location: 40.65575, -74.304294, Site Code: 1

Leg	North Avenue West						North Avenue West						North Union Avenue						North Union Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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**
2024-03-21 4:00PM	9	66	19	0	**94**	12	44	134	2	0	**180**	3	0	76	24	0	**100**	3	1	61	15	0	**77**	3	**451**
4:15PM	3	87	17	0	**107**	7	38	120	2	0	**160**	0	0	95	11	0	**106**	2	0	72	16	0	**88**	7	**461**
4:30PM	5	87	9	0	**101**	10	48	127	1	0	**176**	2	0	84	18	0	**102**	7	0	59	11	0	**70**	6	**449**
4:45PM	8	82	20	0	**110**	8	56	117	1	0	**174**	4	0	96	11	0	**107**	2	2	92	11	0	**105**	4	**496**
Total	25	322	65	0	**412**	37	186	498	6	0	**690**	9	0	351	64	0	**415**	14	3	284	53	0	**340**	20	**1857**
% Approach	6.1%	78.2%	15.8%	0%	**-**	-	27.0%	72.2%	0.9%	0%	**-**	-	0%	84.6%	15.4%	0%	**-**	-	0.9%	83.5%	15.6%	0%	**-**	-	-
% Total	1.3%	17.3%	3.5%	0%	**22.2%**	-	10.0%	26.8%	0.3%	0%	**37.2%**	-	0%	18.9%	3.4%	0%	**22.3%**	-	0.2%	15.3%	2.9%	0%	**18.3%**	-	-
PHF	0.694	0.925	0.813	-	**0.936**	-	0.830	0.929	0.750	-	**0.958**	-	-	0.914	0.667	-	**0.970**	-	0.375	0.772	0.828	-	**0.810**	-	0.936
Lights	24	313	64	0	**401**	-	183	491	6	0	**680**	-	0	349	64	0	**413**	-	3	283	52	0	**338**	-	1832
% Lights	96.0%	97.2%	98.5%	0%	**97.3%**	-	98.4%	98.6%	100%	0%	**98.6%**	-	0%	99.4%	100%	0%	**99.5%**	-	100%	99.6%	98.1%	0%	**99.4%**	-	98.7%
Articulated Trucks	0	1	0	0	**1**	-	0	1	0	0	**1**	-	0	1	0	0	**1**	-	0	0	1	0	**1**	-	4
% Articulated Trucks	0%	0.3%	0%	0%	**0.2%**	-	0%	0.2%	0%	0%	**0.1%**	-	0%	0.3%	0%	0%	**0.2%**	-	0%	0%	1.9%	0%	**0.3%**	-	0.2%
Buses and Single-Unit Trucks	1	8	1	0	**10**	-	3	6	0	0	**9**	-	0	1	0	0	**1**	-	0	1	0	0	**1**	-	21
% Buses and Single-Unit Trucks	4.0%	2.5%	1.5%	0%	**2.4%**	-	1.6%	1.2%	0%	0%	**1.3%**	-	0%	0.3%	0%	0%	**0.2%**	-	0%	0.4%	0%	0%	**0.3%**	-	1.1%
Pedestrians	-	-	-	-	-	37	-	-	-	-	-	6	-	-	-	-	-	14	-	-	-	-	-	20	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	66.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	33.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

1. North Avenue & N. Union Avenue - TMC

Provided by: Imperial Traffic & Data Collection
PO Box 4637, Cherry Hill, NJ, 08003, US

Sat Mar 23, 2024
Forced Peak (Mar 23 2024 11AM - 12 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Crosswalk)
All Movements
ID: 1167483, Location: 40.65575, -74.304294, Site Code: 1

Leg	North Avenue West						North Avenue West						North Union Avenue						North Union Avenue						
Direction	Eastbound						Westbound						Northbound						Southbound						
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
2024-03-23 11:00AM	17	67	12	0	**96**	1	43	88	8	1	**140**	13	0	72	14	0	**86**	6	2	47	23	0	**72**	2	**394**
11:15AM	10	55	22	0	**87**	0	40	95	4	0	**139**	8	1	69	21	0	**91**	4	1	43	20	0	**64**	3	**381**
11:30AM	8	52	16	0	**76**	2	41	97	7	1	**146**	3	0	61	23	0	**84**	3	1	44	15	0	**60**	3	**366**
11:45AM	12	58	15	0	**85**	7	32	108	6	1	**147**	4	0	77	13	0	**90**	5	2	57	20	0	**79**	7	**401**
Total	47	232	65	0	**344**	10	156	388	25	3	**572**	28	1	279	71	0	**351**	18	6	191	78	0	**275**	15	**1542**
% Approach	13.7%	67.4%	18.9%	0%	**-**	-	27.3%	67.8%	4.4%	0.5%	**-**	-	0.3%	79.5%	20.2%	0%	**-**	-	2.2%	69.5%	28.4%	0%	**-**	-	-
% Total	3.0%	15.0%	4.2%	0%	**22.3%**	-	10.1%	25.2%	1.6%	0.2%	**37.1%**	-	0.1%	18.1%	4.6%	0%	**22.8%**	-	0.4%	12.4%	5.1%	0%	**17.8%**	-	-
PHF	0.691	0.866	0.739	-	**0.896**	-	0.907	0.898	0.781	0.750	**0.973**	-	0.250	0.906	0.772	-	**0.964**	-	0.750	0.838	0.848	-	**0.870**	-	0.961
Lights	47	230	64	0	**341**	-	152	386	25	3	**566**	-	1	277	71	0	**349**	-	6	191	78	0	**275**	-	1531
% Lights	100%	99.1%	98.5%	0%	**99.1%**	-	97.4%	99.5%	100%	100%	**99.0%**	-	100%	99.3%	100%	0%	**99.4%**	-	100%	100%	100%	0%	**100%**	-	99.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0%
Buses and Single-Unit Trucks	0	2	1	0	**3**	-	4	2	0	0	**6**	-	0	2	0	0	**2**	-	0	0	0	0	**0**	-	11
% Buses and Single-Unit Trucks	0%	0.9%	1.5%	0%	**0.9%**	-	2.6%	0.5%	0%	0%	**1.0%**	-	0%	0.7%	0%	0%	**0.6%**	-	0%	0%	0%	0%	**0%**	-	0.7%
Pedestrians	-	-	-	-	-	10	-	-	-	-	-	28	-	-	-	-	-	18	-	-	-	-	-	15	
% 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

Colliers Engineering & Design

Traffic Improvement Study

Appendix C | Capacity Analysis

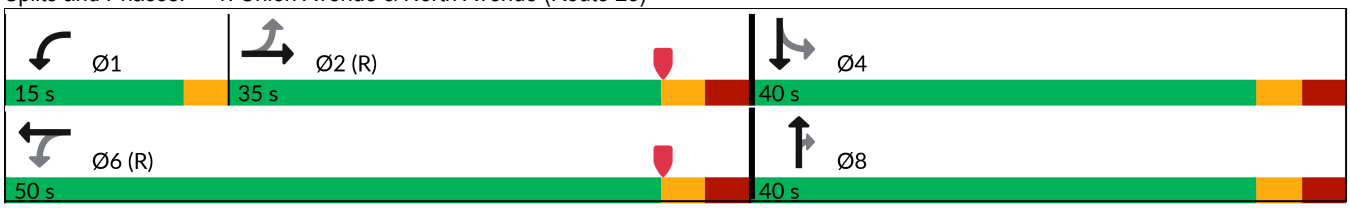
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	347	70	160	501	11	0	309	82	4	219	40
Future Volume (vph)	15	347	70	160	501	11	0	309	82	4	219	40
Satd. Flow (prot)	0	1770	0	1752	1815	0	0	1827	1509	0	1770	0
Flt Permitted		0.976		0.411							0.994	
Satd. Flow (perm)	0	1731	0	758	1815	0	0	1827	1509	0	1762	0
Satd. Flow (RTOR)					2							
Lane Group Flow (vph)	0	459	0	170	545	0	0	329	87	0	280	0
Turn Type	Perm	NA		pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6			8	8	4	4	
Switch Phase												
Minimum Initial (s)	29.0	29.0		5.0	29.0			7.0	7.0	7.0	7.0	
Minimum Split (s)	35.0	35.0		8.0	35.0			13.0	13.0	13.0	13.0	
Total Split (s)	35.0	35.0		15.0	50.0			40.0	40.0	40.0	40.0	
Total Split (%)	38.9%	38.9%		16.7%	55.6%			44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		0.0	3.0			3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0		3.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max			None	None	None	None	
Act Effct Green (s)		43.8		58.9	55.9			22.1	22.1		22.1	
Actuated g/C Ratio		0.49		0.65	0.62			0.25	0.25		0.25	
v/c Ratio		0.54		0.28	0.48			0.73	0.23		0.64	
Control Delay (s/veh)		17.9		8.4	12.2			40.6	26.7		36.8	
Queue Delay		0.6		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		18.5		8.4	12.2			40.6	26.7		36.8	
LOS		B		A	B			D	C		D	
Approach Delay (s/veh)		18.6			11.3			37.8			36.9	
Approach LOS		B			B			D			D	
Queue Length 50th (ft)		103		32	149			174	40		144	
Queue Length 95th (ft)		353		75	291			234	70		200	
Internal Link Dist (ft)		239			200			163			232	
Turn Bay Length (ft)				150								
Base Capacity (vph)		842		630	1128			690	570		665	
Starvation Cap Reductn		139		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.65		0.27	0.48			0.48	0.15		0.42	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay (s/veh): 22.8	Intersection LOS: C
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Union Avenue & North Avenue (Route 28)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	6	361	34	11	489	42	71	53	5	0	0	0
Future Volume (vph)	6	361	34	11	489	42	71	53	5	0	0	0
Satd. Flow (prot)	0	1793	0	0	1792	0	1752	1840	0	0	0	0
Flt Permitted		0.990			0.989		0.950					
Satd. Flow (perm)	0	1777	0	0	1774	0	1752	1840	0	0	0	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	436	0	0	590	0	77	63	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2			6			4				
Permitted Phases	2			6			4					
Detector Phase	2	2		6	6		4	4				
Switch Phase												
Minimum Initial (s)	46.0	46.0		46.0	46.0		12.0	12.0				
Minimum Split (s)	56.0	56.0		56.0	56.0		20.0	20.0				
Total Split (s)	56.0	56.0		56.0	56.0		34.0	34.0				
Total Split (%)	62.2%	62.2%		62.2%	62.2%		37.8%	37.8%				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	7.0	7.0		7.0	7.0		5.0	5.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		10.0			10.0		8.0	8.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None				
Act Effct Green (s)		65.8			65.8		12.2	12.2				
Actuated g/C Ratio		0.73			0.73		0.14	0.14				
v/c Ratio		0.33			0.45		0.32	0.25				
Control Delay (s/veh)		6.9			3.0		39.3	37.7				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay (s/veh)		6.9			3.1		39.3	37.7				
LOS		A			A		D	D				
Approach Delay (s/veh)		7.0			3.1			38.6				
Approach LOS		A			A			D				
Queue Length 50th (ft)		96			30		40	33				
Queue Length 95th (ft)		152			37		82	70				
Internal Link Dist (ft)		216			239			158			144	
Turn Bay Length (ft)							75					
Base Capacity (vph)		1299			1297		506	531				
Starvation Cap Reductn		0			80		0	0				
Spillback Cap Reductn		113			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.37			0.48		0.15	0.12				

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 12 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay (s/veh): 8.8	Intersection LOS: A
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Eastman Street & North Avenue (Route 28)

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	92	382	488	6	19	71
Future Vol, veh/h	92	382	488	6	19	71
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	90	90	90	90	90	90
Heavy Vehicles, %	5	7	4	2	2	3
Mvmt Flow	102	424	542	7	21	79

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	549	0	-	0	1174	546
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	629	-
Critical Hdwy	4.15	-	-	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.245	-	-	-	3.518	3.327
Pot Cap-1 Maneuver	1006	-	-	-	212	536
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1006	-	-	-	184	536
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	531	-

Approach	EB	WB	SW
HCM Control Delay, s/v	1.74	0	17.76
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	349	-	-	-	381
HCM Lane V/C Ratio	0.102	-	-	-	0.262
HCM Control Delay (s/veh)	9	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	1

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	28	102	18	5	20	23	15	80	3	24	67	26
Future Vol, veh/h	28	102	18	5	20	23	15	80	3	24	67	26
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles, %	2	2	6	2	2	2	2	2	2	9	2	4
Mvmt Flow	39	144	25	7	28	32	21	113	4	34	94	37
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.5	8.2	9	9.2
HCM LOS	A	A	A	A

Lane	NELn1	NWLn1	SELn1	SWLn1
Vol Left, %	15%	10%	19%	21%
Vol Thru, %	82%	42%	69%	57%
Vol Right, %	3%	48%	12%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	98	48	148	117
LT Vol	15	5	28	24
Through Vol	80	20	102	67
RT Vol	3	23	18	26
Lane Flow Rate	138	68	208	165
Geometry Grp	1	1	1	1
Degree of Util (X)	0.184	0.087	0.273	0.219
Departure Headway (Hd)	4.809	4.659	4.709	4.79
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	743	765	761	746
Service Time	2.858	2.713	2.752	2.837
HCM Lane V/C Ratio	0.186	0.089	0.273	0.221
HCM Control Delay, s/veh	9	8.2	9.5	9.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.3	1.1	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	375	69	186	498	6	0	351	64	3	284	53
Future Volume (vph)	25	375	69	186	498	6	0	351	64	3	284	53
Satd. Flow (prot)	0	1804	0	1770	1859	0	0	1863	1583	0	1824	0
Flt Permitted		0.956		0.373							0.997	
Satd. Flow (perm)	0	1730	0	695	1859	0	0	1863	1583	0	1818	0
Satd. Flow (RTOR)					1							
Lane Group Flow (vph)	0	499	0	198	536	0	0	373	68	0	361	0
Turn Type	Perm	NA		pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6			8	8	4	4	
Switch Phase												
Minimum Initial (s)	29.0	29.0		5.0	29.0			7.0	7.0	7.0	7.0	
Minimum Split (s)	35.0	35.0		8.0	35.0			13.0	13.0	13.0	13.0	
Total Split (s)	35.0	35.0		15.0	50.0			40.0	40.0	40.0	40.0	
Total Split (%)	38.9%	38.9%		16.7%	55.6%			44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		0.0	3.0			3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0		3.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max			None	None	None	None	
Act Effct Green (s)		41.1		57.0	54.0			24.0	24.0		24.0	
Actuated g/C Ratio		0.46		0.63	0.60			0.27	0.27		0.27	
v/c Ratio		0.63		0.35	0.48			0.75	0.16		0.74	
Control Delay (s/veh)		22.0		9.9	13.2			39.5	23.8		39.3	
Queue Delay		0.6		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		22.7		9.9	13.2			39.5	23.8		39.3	
LOS		C		A	B			D	C		D	
Approach Delay (s/veh)		22.8			12.3			37.1			39.4	
Approach LOS		C			B			D			D	
Queue Length 50th (ft)		182		42	158			193	29		187	
Queue Length 95th (ft)		#460		91	295			258	55		251	
Internal Link Dist (ft)		239			200			163			232	
Turn Bay Length (ft)				150								
Base Capacity (vph)		789		588	1116			703	598		686	
Starvation Cap Reductn		85		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.71		0.34	0.48			0.53	0.11		0.53	

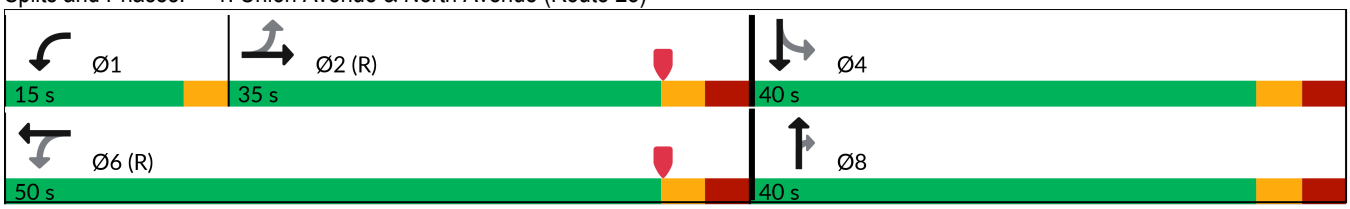
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay (s/veh): 25.0	Intersection LOS: C
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Union Avenue & North Avenue (Route 28)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	7	418	56	12	496	43	51	65	1	0	0	0
Future Volume (vph)	7	418	56	12	496	43	51	65	1	0	0	0
Satd. Flow (prot)	0	1813	0	0	1841	0	1770	1859	0	0	0	0
Flt Permitted		0.992			0.987		0.950					
Satd. Flow (perm)	0	1800	0	0	1819	0	1770	1859	0	0	0	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	496	0	0	567	0	53	68	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2			6			4				
Permitted Phases	2			6			4					
Detector Phase	2	2		6	6		4	4				
Switch Phase												
Minimum Initial (s)	46.0	46.0		46.0	46.0		12.0	12.0				
Minimum Split (s)	56.0	56.0		56.0	56.0		20.0	20.0				
Total Split (s)	56.0	56.0		56.0	56.0		34.0	34.0				
Total Split (%)	62.2%	62.2%		62.2%	62.2%		37.8%	37.8%				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	7.0	7.0		7.0	7.0		5.0	5.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		10.0			10.0		8.0	8.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None				
Act Effct Green (s)		66.0			66.0		12.0	12.0				
Actuated g/C Ratio		0.73			0.73		0.13	0.13				
v/c Ratio		0.37			0.42		0.22	0.27				
Control Delay (s/veh)		7.1			2.6		37.6	38.4				
Queue Delay		0.1			0.0		0.0	0.0				
Total Delay (s/veh)		7.3			2.7		37.6	38.4				
LOS		A			A		D	D				
Approach Delay (s/veh)		7.3			2.7			38.1				
Approach LOS		A			A			D				
Queue Length 50th (ft)		115			34		27	35				
Queue Length 95th (ft)		172			40		62	75				
Internal Link Dist (ft)		216			239			158			144	
Turn Bay Length (ft)							75					
Base Capacity (vph)		1320			1333		511	537				
Starvation Cap Reductn		0			102		0	0				
Spillback Cap Reductn		214			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.45			0.46		0.10	0.13				

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 12 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.43

Intersection Signal Delay (s/veh): 8.3	Intersection LOS: A
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Eastman Street & North Avenue (Route 28)

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	104	471	487	9	10	111
Future Vol, veh/h	104	471	487	9	10	111
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	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	10	2
Mvmt Flow	112	506	524	10	11	119

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	533	0	-	0	1259	528
Stage 1	-	-	-	-	528	-
Stage 2	-	-	-	-	730	-
Critical Hdwy	4.12	-	-	-	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	2.218	-	-	-	3.59	3.318
Pot Cap-1 Maneuver	1034	-	-	-	181	550
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	463	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1034	-	-	-	154	550
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	463	-

Approach	EB	WB	SW
HCM Control Delay, s/v	1.61	0	16.09
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	326	-	-	-	454
HCM Lane V/C Ratio	0.108	-	-	-	0.287
HCM Control Delay (s/veh)	8.9	0	-	-	16.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	22	76	18	9	18	23	11	99	3	37	94	29
Future Vol, veh/h	22	76	18	9	18	23	11	99	3	37	94	29
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	20	11	6	5	2	2	20	3	3	11
Mvmt Flow	24	82	19	10	19	25	12	106	3	40	101	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.1	8.4	8.7
HCM LOS	A	A	A	A

Lane	NELn1	NWLn1	SELn1	SWLn1
Vol Left, %	10%	18%	19%	23%
Vol Thru, %	88%	36%	66%	59%
Vol Right, %	3%	46%	16%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	113	50	116	160
LT Vol	11	9	22	37
Through Vol	99	18	76	94
RT Vol	3	23	18	29
Lane Flow Rate	122	54	125	172
Geometry Grp	1	1	1	1
Degree of Util (X)	0.154	0.07	0.16	0.213
Departure Headway (Hd)	4.554	4.673	4.618	4.451
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	787	766	777	807
Service Time	2.582	2.707	2.647	2.477
HCM Lane V/C Ratio	0.155	0.07	0.161	0.213
HCM Control Delay, s/veh	8.4	8.1	8.5	8.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0.6	0.8

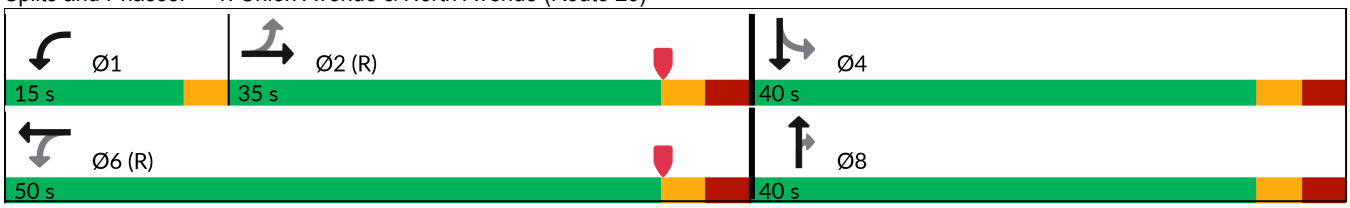
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	255	67	156	388	28	0	279	71	6	191	78
Future Volume (vph)	47	255	67	156	388	28	0	279	71	6	191	78
Satd. Flow (prot)	0	1805	0	1752	1844	0	0	1863	1583	0	1790	0
Flt Permitted		0.904		0.479							0.991	
Satd. Flow (perm)	0	1642	0	884	1844	0	0	1863	1583	0	1776	0
Satd. Flow (RTOR)					6							
Lane Group Flow (vph)	0	385	0	163	433	0	0	291	74	0	286	0
Turn Type	Perm	NA		pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6			8	8	4	4	
Switch Phase												
Minimum Initial (s)	29.0	29.0		5.0	29.0			7.0	7.0	7.0	7.0	
Minimum Split (s)	35.0	35.0		8.0	35.0			13.0	13.0	13.0	13.0	
Total Split (s)	35.0	35.0		15.0	50.0			40.0	40.0	40.0	40.0	
Total Split (%)	38.9%	38.9%		16.7%	55.6%			44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		0.0	3.0			3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0		3.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max			None	None	None	None	
Act Effct Green (s)		46.3		61.0	58.0			20.0	20.0		20.0	
Actuated g/C Ratio		0.51		0.68	0.64			0.22	0.22		0.22	
v/c Ratio		0.45		0.23	0.36			0.70	0.21		0.72	
Control Delay (s/veh)		13.8		7.0	9.3			41.0	27.9		42.7	
Queue Delay		0.4		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		14.3		7.0	9.3			41.0	27.9		42.7	
LOS		B		A	A			D	C		D	
Approach Delay (s/veh)		14.3			8.7			38.4			42.7	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)		77		29	100			153	35		152	
Queue Length 95th (ft)		272		65	193			216	64		216	
Internal Link Dist (ft)		239			200			163			232	
Turn Bay Length (ft)				150								
Base Capacity (vph)		844		714	1190			703	598		670	
Starvation Cap Reductn		160		0	0			0	0		0	
Spillback Cap Reductn		0		0	5			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.56		0.23	0.37			0.41	0.12		0.43	

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay (s/veh): 22.6	Intersection LOS: C
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Union Avenue & North Avenue (Route 28)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	12	326	54	19	372	76	43	46	4	0	0	0
Future Volume (vph)	12	326	54	19	372	76	43	46	4	0	0	0
Satd. Flow (prot)	0	1826	0	0	1818	0	1770	1842	0	0	0	0
Flt Permitted		0.981			0.973		0.950					
Satd. Flow (perm)	0	1793	0	0	1773	0	1770	1842	0	0	0	0
Satd. Flow (RTOR)												
Lane Group Flow (vph)	0	440	0	0	524	0	48	56	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		2			6			4				
Permitted Phases	2			6			4					
Detector Phase	2	2		6	6		4	4				
Switch Phase												
Minimum Initial (s)	46.0	46.0		46.0	46.0		12.0	12.0				
Minimum Split (s)	56.0	56.0		56.0	56.0		20.0	20.0				
Total Split (s)	56.0	56.0		56.0	56.0		34.0	34.0				
Total Split (%)	62.2%	62.2%		62.2%	62.2%		37.8%	37.8%				
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0				
All-Red Time (s)	7.0	7.0		7.0	7.0		5.0	5.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		10.0			10.0		8.0	8.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None				
Act Effct Green (s)		66.0			66.0		12.0	12.0				
Actuated g/C Ratio		0.73			0.73		0.13	0.13				
v/c Ratio		0.33			0.40		0.20	0.22				
Control Delay (s/veh)		6.7			5.7		37.2	37.5				
Queue Delay		0.0			0.2		0.0	0.0				
Total Delay (s/veh)		6.8			5.9		37.2	37.5				
LOS		A			A		D	D				
Approach Delay (s/veh)		6.8			5.9			37.4				
Approach LOS		A			A			D				
Queue Length 50th (ft)		97			178		25	29				
Queue Length 95th (ft)		145			77		57	64				
Internal Link Dist (ft)		216			239			158			144	
Turn Bay Length (ft)							75					
Base Capacity (vph)		1315			1300		511	532				
Starvation Cap Reductn		0			248		0	0				
Spillback Cap Reductn		73			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.35			0.50		0.09	0.11				

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 12 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay (s/veh): 9.4	Intersection LOS: A
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Eastman Street & North Avenue (Route 28)

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	116	372	362	14	20	123
Future Vol, veh/h	116	372	362	14	20	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	5	2
Mvmt Flow	122	392	381	15	21	129

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	396	0	-	0	1024	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	636	-
Critical Hdwy	4.12	-	-	-	6.45	6.22
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	2.218	-	-	-	3.545	3.318
Pot Cap-1 Maneuver	1163	-	-	-	257	660
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1163	-	-	-	223	660
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	522	-

Approach	EB	WB	SW
HCM Control Delay, s/v	2.01	0	14.78
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	428	-	-	-	518
HCM Lane V/C Ratio	0.105	-	-	-	0.291
HCM Control Delay (s/veh)	8.5	0	-	-	14.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	38	40	29	24	8	56	12	112	6	47	90	28
Future Vol, veh/h	38	40	29	24	8	56	12	112	6	47	90	28
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	3	3	4	2	2	2	8	2	2	2	3	2
Mvmt Flow	43	45	33	27	9	63	13	126	7	53	101	31
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	SE	NW	NE	SW
Opposing Approach	NW	SE	SW	NE
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SW	NE	SE	NW
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NE	SW	NW	SE
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.7	8.2	8.9	9
HCM LOS	A	A	A	A

Lane	NELn1	NWLn1	SELn1	SWLn1
Vol Left, %	9%	27%	36%	28%
Vol Thru, %	86%	9%	37%	55%
Vol Right, %	5%	64%	27%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	130	88	107	165
LT Vol	12	24	38	47
Through Vol	112	8	40	90
RT Vol	6	56	29	28
Lane Flow Rate	146	99	120	185
Geometry Grp	1	1	1	1
Degree of Util (X)	0.193	0.125	0.159	0.236
Departure Headway (Hd)	4.759	4.54	4.759	4.581
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	752	787	751	782
Service Time	2.801	2.583	2.801	2.62
HCM Lane V/C Ratio	0.194	0.126	0.16	0.237
HCM Control Delay, s/veh	8.9	8.2	8.7	9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.7	0.4	0.6	0.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	347	157	171	501	11	0	309	82	4	219	40
Future Volume (vph)	15	347	157	171	501	11	0	309	82	4	219	40
Satd. Flow (prot)	0	1745	0	1752	1815	0	0	1827	1509	0	1770	0
Flt Permitted		0.980		0.352							0.994	
Satd. Flow (perm)	0	1712	0	649	1815	0	0	1827	1509	0	1762	0
Satd. Flow (RTOR)					2							
Lane Group Flow (vph)	0	558	0	184	551	0	0	332	88	0	282	0
Turn Type	Perm	NA		pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6			8	8	4	4	
Switch Phase												
Minimum Initial (s)	29.0	29.0		5.0	29.0			7.0	7.0	7.0	7.0	
Minimum Split (s)	35.0	35.0		8.0	35.0			13.0	13.0	13.0	13.0	
Total Split (s)	35.0	35.0		15.0	50.0			40.0	40.0	40.0	40.0	
Total Split (%)	38.9%	38.9%		16.7%	55.6%			44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		0.0	3.0			3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0		3.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max			None	None	None	None	
Act Effct Green (s)		43.3		58.8	55.8			22.2	22.2		22.2	
Actuated g/C Ratio		0.48		0.65	0.62			0.25	0.25		0.25	
v/c Ratio		0.67		0.34	0.48			0.73	0.23		0.64	
Control Delay (s/veh)		23.0		9.0	12.4			40.5	26.6		36.7	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		23.0		9.0	12.4			40.5	26.6		36.7	
LOS		C		A	B			D	C		D	
Approach Delay (s/veh)		23.0			11.6			37.7			36.7	
Approach LOS		C			B			D			D	
Queue Length 50th (ft)		186		36	153			175	40		145	
Queue Length 95th (ft)		#508		81	298			236	70		200	
Internal Link Dist (ft)		537			200			163			232	
Turn Bay Length (ft)				150								
Base Capacity (vph)		823		574	1125			690	570		665	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.68		0.32	0.49			0.48	0.15		0.42	

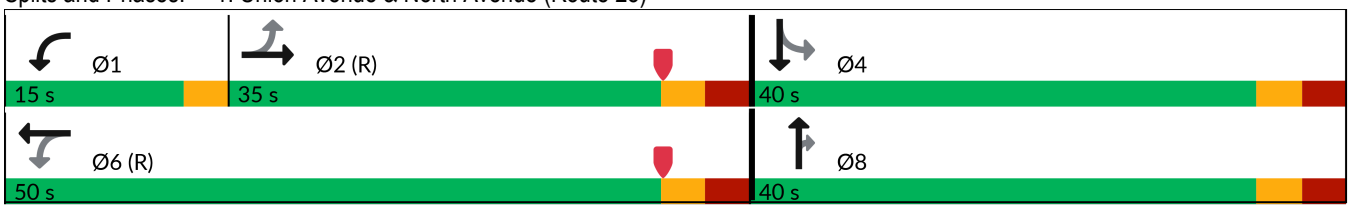
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

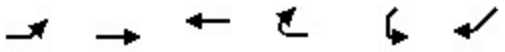
Maximum v/c Ratio: 0.74

Intersection Signal Delay (s/veh): 23.8	Intersection LOS: C
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Union Avenue & North Avenue (Route 28)





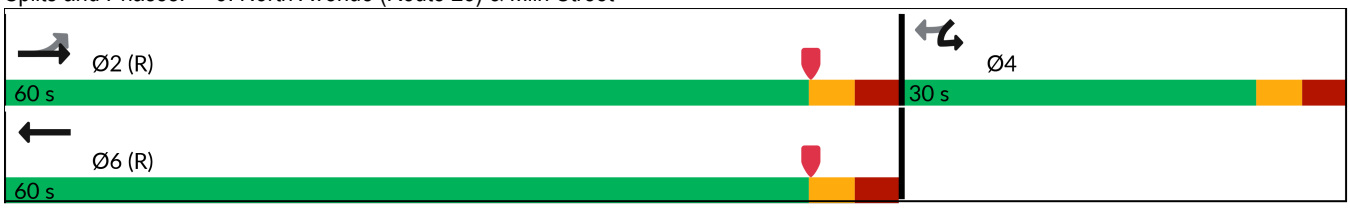
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	98	376	493	43	143	71
Future Volume (vph)	98	376	493	43	143	71
Satd. Flow (prot)	0	1765	1810	0	1711	1516
Flt Permitted		0.716			0.950	
Satd. Flow (perm)	0	1276	1810	0	1711	1516
Satd. Flow (RTOR)			9			79
Lane Group Flow (vph)	0	527	596	0	159	79
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	22.0	22.0	22.0		21.0	21.0
Minimum Split (s)	28.0	28.0	28.0		27.0	27.0
Total Split (s)	60.0	60.0	60.0		30.0	30.0
Total Split (%)	66.7%	66.7%	66.7%		33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	None
Act Effct Green (s)		57.0	57.0		21.0	21.0
Actuated g/C Ratio		0.63	0.63		0.23	0.23
v/c Ratio		0.65	0.51		0.39	0.19
Control Delay (s/veh)		15.1	3.9		32.7	8.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		15.1	3.9		32.7	8.1
LOS		B	A		C	A
Approach Delay (s/veh)		15.1	3.9		24.6	
Approach LOS		B	A		C	
Queue Length 50th (ft)		169	28		77	0
Queue Length 95th (ft)		281	34		135	35
Internal Link Dist (ft)		527	537		74	
Turn Bay Length (ft)						50
Base Capacity (vph)		808	1149		456	462
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.65	0.52		0.35	0.17

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay (s/veh): 11.9	Intersection LOS: B
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: North Avenue (Route 28) & Miln Street



Intersection	
Int Delay, s/veh	4.7

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	28	120	35	106	91	26
Future Vol, veh/h	28	120	35	106	91	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	6	2	2	2	4
Mvmt Flow	39	169	49	149	128	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	394	146	165	0	-	0
Stage 1	146	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	6.42	6.26	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.354	2.218	-	-	-
Pot Cap-1 Maneuver	610	890	1414	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	793	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	587	890	1414	-	-	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	793	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s/v	10.97	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	447	-	811	-	-
HCM Lane V/C Ratio	0.035	-	0.257	-	-
HCM Control Delay (s/veh)	7.6	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	375	190	198	498	6	0	351	64	3	284	53
Future Volume (vph)	25	375	190	198	498	6	0	351	64	3	284	53
Satd. Flow (prot)	0	1767	0	1770	1859	0	0	1863	1583	0	1824	0
Flt Permitted		0.964		0.303							0.997	
Satd. Flow (perm)	0	1706	0	564	1859	0	0	1863	1583	0	1818	0
Satd. Flow (RTOR)					1							
Lane Group Flow (vph)	0	628	0	211	536	0	0	373	68	0	361	0
Turn Type	Perm	NA		pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6			8	8	4	4	
Switch Phase												
Minimum Initial (s)	29.0	29.0		5.0	29.0			7.0	7.0	7.0	7.0	
Minimum Split (s)	35.0	35.0		8.0	35.0			13.0	13.0	13.0	13.0	
Total Split (s)	35.0	35.0		15.0	50.0			40.0	40.0	40.0	40.0	
Total Split (%)	38.9%	38.9%		16.7%	55.6%			44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		0.0	3.0			3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0		3.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max			None	None	None	None	
Act Effct Green (s)		40.8		57.0	54.0			24.0	24.0		24.0	
Actuated g/C Ratio		0.45		0.63	0.60			0.27	0.27		0.27	
v/c Ratio		0.81		0.42	0.48			0.75	0.16		0.74	
Control Delay (s/veh)		31.1		10.9	13.2			39.5	23.8		39.3	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		31.1		10.9	13.2			39.5	23.8		39.3	
LOS		C		B	B			D	C		D	
Approach Delay (s/veh)		31.1			12.6			37.1			39.4	
Approach LOS		C			B			D			D	
Queue Length 50th (ft)		220		46	158			193	29		187	
Queue Length 95th (ft)		#629		97	295			258	55		251	
Internal Link Dist (ft)		537			200			163			232	
Turn Bay Length (ft)				150								
Base Capacity (vph)		774		523	1116			703	598		686	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.81		0.40	0.48			0.53	0.11		0.53	

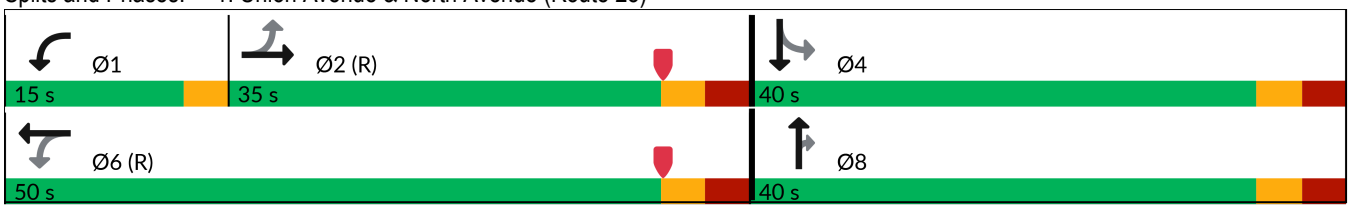
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 27.3	Intersection LOS: C
Intersection Capacity Utilization 94.9%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Union Avenue & North Avenue (Route 28)



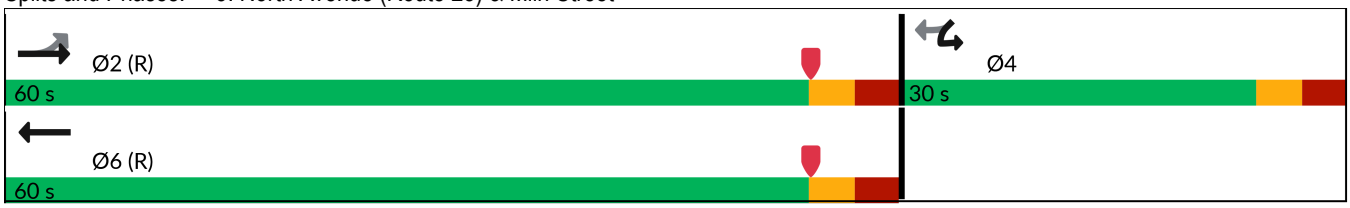
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	111	464	496	43	126	102
Future Volume (vph)	111	464	496	43	126	102
Satd. Flow (prot)	0	1844	1842	0	1586	1531
Flt Permitted		0.722			0.950	
Satd. Flow (perm)	0	1345	1842	0	1586	1531
Satd. Flow (RTOR)			9			110
Lane Group Flow (vph)	0	618	579	0	135	110
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	22.0	22.0	22.0		21.0	21.0
Minimum Split (s)	28.0	28.0	28.0		27.0	27.0
Total Split (s)	60.0	60.0	60.0		30.0	30.0
Total Split (%)	66.7%	66.7%	66.7%		33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	None
Act Effct Green (s)		57.0	57.0		21.0	21.0
Actuated g/C Ratio		0.63	0.63		0.23	0.23
v/c Ratio		0.72	0.49		0.36	0.24
Control Delay (s/veh)		17.5	3.6		32.3	7.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		17.5	3.6		32.3	7.4
LOS		B	A		C	A
Approach Delay (s/veh)		17.5	3.7		21.2	
Approach LOS		B	A		C	
Queue Length 50th (ft)		214	32		65	0
Queue Length 95th (ft)		358	39		118	40
Internal Link Dist (ft)		527	537		74	
Turn Bay Length (ft)						50
Base Capacity (vph)		851	1169		422	488
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.73	0.50		0.32	0.23

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay (s/veh): 12.6	Intersection LOS: B
Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: North Avenue (Route 28) & Miln Street



Intersection	
Int Delay, s/veh	3.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	22	94	29	125	131	29
Future Vol, veh/h	22	94	29	125	131	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	20	2	2	3	11
Mvmt Flow	24	101	31	134	141	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	353	156	172	0	-	0
Stage 1	156	-	-	-	-	-
Stage 2	197	-	-	-	-	-
Critical Hdwy	6.42	6.4	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.48	2.218	-	-	-
Pot Cap-1 Maneuver	645	844	1405	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	629	844	1405	-	-	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	836	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s/v	10.39	1.44	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	339	-	793	-	-
HCM Lane V/C Ratio	0.022	-	0.157	-	-
HCM Control Delay (s/veh)	7.6	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	255	167	175	388	28	0	279	71	6	191	78
Future Volume (vph)	47	255	167	175	388	28	0	279	71	6	191	78
Satd. Flow (prot)	0	1764	0	1752	1844	0	0	1863	1583	0	1790	0
Flt Permitted		0.922		0.413							0.991	
Satd. Flow (perm)	0	1635	0	762	1844	0	0	1863	1583	0	1776	0
Satd. Flow (RTOR)					6							
Lane Group Flow (vph)	0	489	0	182	433	0	0	291	74	0	286	0
Turn Type	Perm	NA		pm+pt	NA			NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6					8	4		
Detector Phase	2	2		1	6			8	8	4	4	
Switch Phase												
Minimum Initial (s)	29.0	29.0		5.0	29.0			7.0	7.0	7.0	7.0	
Minimum Split (s)	35.0	35.0		8.0	35.0			13.0	13.0	13.0	13.0	
Total Split (s)	35.0	35.0		15.0	50.0			40.0	40.0	40.0	40.0	
Total Split (%)	38.9%	38.9%		16.7%	55.6%			44.4%	44.4%	44.4%	44.4%	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
All-Red Time (s)	3.0	3.0		0.0	3.0			3.0	3.0	3.0	3.0	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0		3.0	6.0			6.0	6.0		6.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Recall Mode	C-Max	C-Max		None	C-Max			None	None	None	None	
Act Effct Green (s)		45.9		61.0	58.0			20.0	20.0		20.0	
Actuated g/C Ratio		0.51		0.68	0.64			0.22	0.22		0.22	
v/c Ratio		0.58		0.29	0.36			0.70	0.21		0.72	
Control Delay (s/veh)		18.1		7.4	9.3			41.0	27.9		42.7	
Queue Delay		0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)		18.1		7.4	9.3			41.0	27.9		42.7	
LOS		B		A	A			D	C		D	
Approach Delay (s/veh)		18.1			8.8			38.4			42.7	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)		152		32	100			153	35		152	
Queue Length 95th (ft)		#312		72	193			216	64		216	
Internal Link Dist (ft)		537			200			163			232	
Turn Bay Length (ft)				150								
Base Capacity (vph)		832		649	1190			703	598		670	
Starvation Cap Reductn		0		0	0			0	0		0	
Spillback Cap Reductn		0		0	0			0	0		0	
Storage Cap Reductn		0		0	0			0	0		0	
Reduced v/c Ratio		0.59		0.28	0.36			0.41	0.12		0.43	

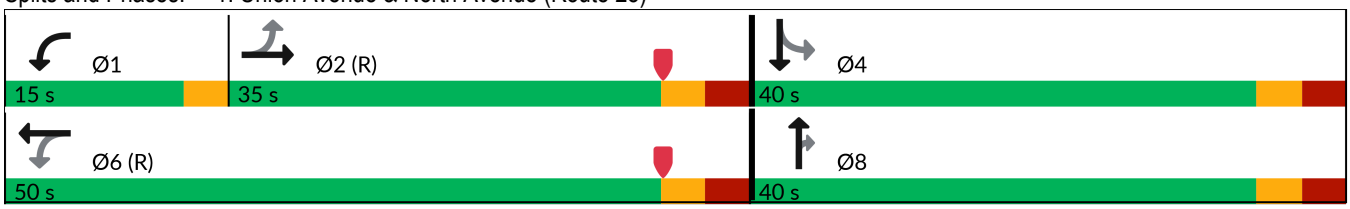
Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay (s/veh): 23.1	Intersection LOS: C
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Union Avenue & North Avenue (Route 28)



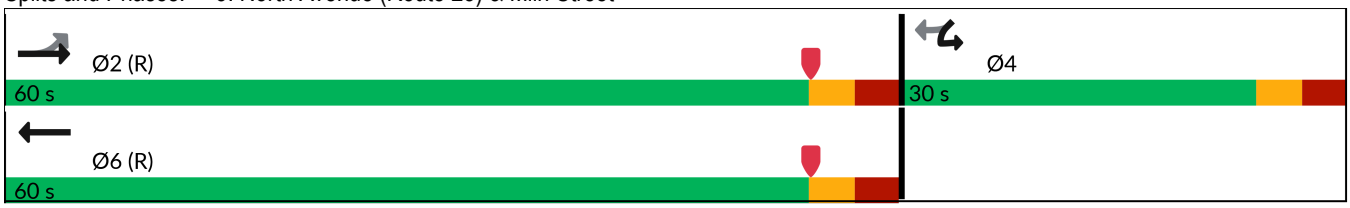
Lane Group	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	128	360	386	66	109	103
Future Volume (vph)	128	360	386	66	109	103
Satd. Flow (prot)	0	1839	1825	0	1662	1531
Flt Permitted		0.729			0.950	
Satd. Flow (perm)	0	1358	1825	0	1662	1531
Satd. Flow (RTOR)			17			108
Lane Group Flow (vph)	0	514	475	0	115	108
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Detector Phase	2	2	6		4	4
Switch Phase						
Minimum Initial (s)	22.0	22.0	22.0		21.0	21.0
Minimum Split (s)	28.0	28.0	28.0		27.0	27.0
Total Split (s)	60.0	60.0	60.0		30.0	30.0
Total Split (%)	66.7%	66.7%	66.7%		33.3%	33.3%
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0
All-Red Time (s)	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	C-Max	C-Max	C-Max		None	None
Act Effct Green (s)		57.0	57.0		21.0	21.0
Actuated g/C Ratio		0.63	0.63		0.23	0.23
v/c Ratio		0.59	0.40		0.29	0.24
Control Delay (s/veh)		13.3	5.8		30.9	7.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay (s/veh)		13.3	5.8		30.9	7.4
LOS		B	A		C	A
Approach Delay (s/veh)		13.4	5.8		19.6	
Approach LOS		B	A		B	
Queue Length 50th (ft)		155	47		54	0
Queue Length 95th (ft)		252	63		102	40
Internal Link Dist (ft)		527	537		74	
Turn Bay Length (ft)						50
Base Capacity (vph)		860	1162		443	487
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.60	0.41		0.26	0.22

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 17 (19%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 65
Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay (s/veh): 11.6	Intersection LOS: B
Intersection Capacity Utilization 82.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: North Avenue (Route 28) & Miln Street



Intersection	
Int Delay, s/veh	2.8

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	38	69	20	174	137	28
Future Vol, veh/h	38	69	20	174	137	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	4	8	2	3	2
Mvmt Flow	43	78	22	196	154	31

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	410	170	185	0	-	0
Stage 1	170	-	-	-	-	-
Stage 2	240	-	-	-	-	-
Critical Hdwy	6.43	6.24	4.18	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.336	2.272	-	-	-
Pot Cap-1 Maneuver	596	869	1354	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	585	869	1354	-	-	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	797	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s/v	10.8	0.79	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	186	-	741	-	-
HCM Lane V/C Ratio	0.017	-	0.162	-	-
HCM Control Delay (s/veh)	7.7	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

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