North Elm Street Area Traffic Study

Northampton DPW

Northampton, MA

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Appendices **End of Report**

1 Executive Summary

Fuss & O'Neill has completed a traffic study on behalf of the City of Northampton to review pedestrian and bicycle safety, vehicular traffic flow, parking conditions, and traffic controls in the vicinity of Northampton High School in Northampton, Massachusetts. The intersections analyzed include North Elm Street and Woodlawn Avenue, North Elm Street and Elm Street, Elm Street and Northampton High School, and Elm Street and Milton Street/ Riverside Drive. This study evaluates alternative circulation and traffic control, as well as pedestrian and bicycle safety improvements to improve the safety and efficiency of traffic operations for all roadway users in the vicinity of the high school. A map of the study area can be found in Appendix A.

Data was collected in the study area including:

- Weekday morning and afternoon peak hour intersection turning movement counts of vehicles, bicycles, and pedestrians
- Automatic traffic recorder counts consisting of 48-hour directional vehicular volume, classification, and speed
- Crash history records for five years between January 2017 and July 2022 from the Massachusetts Department of Transportation (MassDOT) and the City of Northampton Police Department
- Parking occupancy counts
- Field observations including current school arrival/dismissal operations

Using the collected data, the following analyses were performed:

- Traffic signal warrant analysis
- Crash statistics summary
- Traffic operational analysis of level of service, delay, and queue length
- Approximate cost estimates for proposed improvements

Based on the data collected, six alternatives were selected for analysis with a goal of improving the existing safety conditions and traffic operations around the high school. The following scenarios were analyzed as part of this study:

- No Build Alternative
- Signalizing one or more intersections
- Making Woodlawn Avenue one-way eastbound
- Prohibiting the left turn from Elm Street onto North Elm Street
- Closing the intersection of Elm Street at North Elm Street
- Removing parking spaces on North Elm Street between Woodlawn Avenue and Elm Street
- Designating a student drop off zone in the Northampton High School parking lot

1.1 Recommendations

Based on the analysis completed for each alternative, a set of nine recommendations were created, each providing improvements to the safety of school arrival/dismissal operations, study area traffic operations, parking near the school, and pedestrian and bicyclist safety in the study area.

1. Install traffic signals at both study intersections along North Elm Street and implement a pedestrian refuge island on the Elm Street approach.

2. Remove the existing five parking spaces on the east side of North Elm Street between Woodlawn Avenue and Elm Street and implement a bicycle lane in its place.

3. Construct a bump out on the west side of North Elm Street to replace the existing 50-foot-long painted bump out south of Elm Street.

4. Create a pick up and drop off lane inside the Northampton High School parking lot and implement one-way traffic during pick up and drop off times.

5. Reopen the section of road that passes in front of the high school connecting Elm Street to North Elm Street and construct a one-way bus lane for student pick up and drop off.

6. Create a dedicated parking lane on the north side of Woodlawn Avenue.

7. Add a pedestrian refuge island between Riverside Drive and Milton Street.

8. Move the stop bar on Riverside Drive up to the crosswalk.

9. Turn Milton Street into a one-way between Elm Street and Ormond Drive.

2 Existing Roadway Conditions

2.1 Physical Characteristics of the Study Area

The roads included in the study area are summarized in Appendix A.

2.1.1 Existing Roadway Conditions

North Elm Street (Route 9) is a north/south roadway under City jurisdiction that is classified by MassDOT as a principal arterial. In the project area, the roadway provides one travel lane in each direction with a dedicated left turn lane onto Woodlawn Avenue and Elm Street, respectively, along the frontage of the high school. Northbound and southbound traffic is separated by a curbed concrete median. Unbuffered bicycle lanes five feet in width are provided both northbound and southbound within the study area and end abruptly between the Woodlawn Avenue and Elm Street intersections at the southern tip of Child's Park. The bicycle lane is replaced with striped parking spaces on both sides of the road, which requires cyclists to merge into the traffic lane and leaves them exposed to door opening conflicts.

Bus stops serviced by the Pioneer Valley Transit Authority (PVTA) bus route R42 are provided on North Elm Street directly across from Woodlawn Avenue in the southbound direction and just north of the intersection with Elm Street in the northbound direction. This bus route runs from downtown Northampton to Williamsburg every hour from 6:00 a.m. to 9:00 p.m. on weekdays, and every hour from 7:00 a.m. to 7:00 p.m. on Saturday.

The intersection of North Elm Street and Woodlawn Avenue is a T-style stop-controlled intersection, with North Elm Street providing the free flowing northbound and southbound approaches, and Woodlawn Avenue providing the stop-controlled westbound approach. Westbound left turns are not permitted from Woodlawn Avenue onto North Elm Street. North Elm Street provides one shared through/right turn lane on the northbound approach and one through lane alongside a dedicated left turn lane on the southbound approach. Woodlawn Avenue provides one travel lane in each direction.

The sidewalks along North Elm Street have a gap on the western side of the roadway ending approximately five feet north of the bus stop across from Woodlawn Avenue and continuing approximately 50 feet west, where it connects with the high school sidewalk. The existing sidewalks are five feet in width and observed to be in good condition. Bicycle lanes observed to be in good condition are provided on both sides of the road south of the intersection. Crosswalks are provided south of the intersection as well as across Woodlawn Avenue. The crosswalk south of the intersection crossing North Elm Street is approximately 90 feet in length with a pedestrian refuge island between the northbound and southbound travel lanes. The crosswalk across Woodlawn Avenue is approximately 45 feet long and appears to have ADA compliant curb ramps. The existing curb ramps do not appear to be ADA compliant across North Elm Street. Additionally, public parking is permitted along the north side of Woodlawn Avenue and the east side of North Elm Street, adjacent to Child's Park.

The intersection of North Elm Street and Elm Street is a T-style stop-controlled intersection, with North Elm Street providing the free flowing northbound and southbound approaches, and Elm Street providing the stop-controlled eastbound approach. Sidewalks five feet in width observed to be in good condition are provided along both sides of North Elm Street except for the segment on the western side of North Elm Street between Elm Street and just north of the bus stop, which was observed to be in fair condition. The bus shelter location is currently non-compliant for accessibility due to the lack of connectivity with the accessible route, accessible path around the shelter, or any pad for embarking/disembarking. A sidewalk five feet in width observed to be in fair condition is provided along the southern side of Elm Street to the high school entrance. A crosswalk approximately 65 feet in length is provided south of the intersection across North Elm Street and a crosswalk approximately 90 feet in length is provided across Elm Street. The crosswalk spanning North Elm Street at this intersection currently has a Rectangular Rapid Flashing Beacon (RRFB) in operation. Curb ramps do not appear to be ADA compliant. Bicycle facilities are not provided at this intersection. The bicycle lane continues north of this intersection on both sides of the road and was observed to be in good condition.

The intersection of Elm Street and Northampton High School driveway is a T-style stop-controlled intersection, with Elm Street providing the free flowing eastbound and westbound approaches, and Northampton High School providing the stop-controlled northbound approach. Each approach provides one lane of travel in each direction. A five-foot sidewalk observed to be in good condition is provided along the southern side of the road with a crosswalk extending across the Northampton High School driveway that is approximately 50 feet in length. Curb ramps do not appear to be ADA compliant and bicycle facilities are not provided at this intersection.

The intersection of Elm Street and Milton Street/Riverside Drive is a four-way stop-controlled intersection, with Elm Street providing the eastbound and westbound free flowing approaches, Milton Street providing the northbound stop-controlled approach, and Riverside Drive providing the northeast-bound stop-controlled approach. Each approach provides one lane of travel in each direction. A sidewalk five feet in width observed to be in good condition is provided along the southern side of Elm Street east of the intersection. A sidewalk approximately three feet in width observed to be in fair condition is provided on the eastern side of Milton Street. A 100-foot crosswalk is provided extending along Elm Street across Milton Street and Riverside Drive, and a 20-foot crosswalk is provided across Milton Street connecting to Riverside Drive approximately 40 feet south of the Elm Street travel way. Curb ramps do not appear to be ADA compliant and bicycle facilities are not provided at this intersection.

2.1.2 Existing Circulation

Northampton High School operates weekdays from 9:00 a.m. to 3:30 p.m. and approximately 900 students are enrolled as well as 100 staff members. Busing is only available to students who live greater than 1.5 miles from the high school and about 150 students take the bus.

Pick up and drop off happens in several locations in the immediate vicinity of the school. Primarily students get picked up and dropped off in the parking lanes along both sides of North Elm Street as well as along school frontage on the southern side of Elm Street east of Milton Street. Buses utilize the school's parking lot adjacent to the building to pick up and drop off students and then depart onto Elm Street. Additionally, many students walk or bike to school and rely on the existing pedestrian and bicycle

infrastructure. Two crossing guards are present for both pick up and drop off operations: one at the intersection of North Elm Street and Woodlawn Avenue and another at the intersection of North Elm Street and Elm Street.

2.1.3 Field Observations

At the time of field observations, parking was prohibited on the eastern side of North Elm Street. It was observed that drivers parked on the shoulder of the road between the parking lane on the western side of the road and Elm Street that does not have parking spaces and therefore obstruct sight distances for both vehicles and pedestrians and block the crosswalk. Drivers turning right onto North Elm Street could not see if there were vehicles backed up waiting for drivers to pull into or out of parking spaces. This also made it difficult for left turning vehicles and pedestrians to ensure there were no vehicles approaching on North Elm Street northbound without entering the roadway. It was also observed that people going to the high school utilized parking spaces on North Elm Street north of the intersection with Elm Street as well for pick up and drop off maneuvers.

Additionally, drivers were observed to ignore the "No Parking" signs on the south side of Elm Street during pick up and drop off times, partially blocking the eastbound travel lane. Once a student was picked up or dropped off, drivers often performed a three-point turn to return westbound on Elm Street consequently impeding traffic flow. The north side of Woodlawn Avenue is also used for student parking as well as people using Child's Park. Vehicles parked along Woodlawn Avenue create a similar obstruction by encroaching into the westbound travel lane.

At the intersection of Elm Street and Milton Street/Riverside Drive, it was observed that operators on Riverside Drive would disregard the stop bar and instead stop at the crosswalk to have a better sight distance towards the west. Drivers approaching the intersection on Riverside Drive and Milton Street were observed to be confused as to the proper right-of-way to be used at the intersection as they approach Elm Street.

It was also observed that the stopping sight distance for northbound traffic to the crosswalk spanning North Elm Street south of Woodlawn Avenue is approximately 200 feet due to the horizontal curvature of the roadway. Based on the posted speed limit of 35 miles per hour, in accordance with the criteria set forth in the 2006 MassDOT Project Development & Design Guide, 250 feet of stopping sight distance is required.

2.2 Operational and Safety Characteristics of the Study Area

2.2.1 Existing Volumes and Counts

Turning movement counts (TMC) were conducted on April 5, 2022, between 7:30 a.m. and 9:30 a.m., and 3:00 p.m. and 5:00 p.m. at the following intersections:

- North Elm Street at Woodlawn Avenue
- North Elm Street at Elm Street
- Elm Street at the Northampton High School entrance
- Elm Street at Milton Street and Riverside Drive

Pedestrian counts were conducted at each study intersection during the same time frame.

The morning peak hours at the study area intersections vary slightly as we move east to west. The morning peak hour at the intersection of North Elm Street and Woodlawn Avenue occurred from 7:45 a.m. to 8:45 a.m. The morning peak hour at the intersection of North Elm Street and Elm Street as well as the intersection of Elm Street and Milton Street/Riverside Drive occurred from 8:00 a.m. to 9:00 a.m., and the intersection of Elm Street and the Northampton High School entrance had a peak hour from 8:15 a.m. to 9:15 a.m.

The afternoon peak hour at the intersections of North Elm Street and Woodlawn Avenue as well as North Elm Street at Elm Street occurred from 3:00 p.m. to 4:00 p.m. The intersection of Elm Street and the Northampton High School entrance had a peak hour from 3:15 p.m. to 4:15 p.m. The intersection of Elm Street and Milton Street/Riverside Drive had a peak hour from 3:30 p.m. to 4:30 p.m.

The weekday morning count at the intersection of North Elm Street and Woodlawn Avenue indicated a total of 17 pedestrians from the east and 80 pedestrians from the south. The weekday morning count at the intersection of North Elm Street and Elm Street indicated a total of 10 pedestrians from the west and 109 total from the south. The weekday morning count at the Northampton High School entrance indicated a total of two pedestrians from the south and the intersection of Elm Street and Milton Street/Riverside Drive indicated a total of 15 pedestrians from Riverside Drive. The peak hour for pedestrians was consistent throughout the study area and occurred from 8:30 a.m. to 9:30 a.m., 30 minutes before and after the start of school.

The weekday afternoon count at the intersection of North Elm Street and Woodlawn Avenue indicated a total of 64 pedestrians from the east and 71 pedestrians from the south. The weekday afternoon count at the intersection of North Elm Street and Elm Street indicated a total of 29 pedestrians from the west and 113 total from the south. The weekday afternoon count at the intersection of Elm Street and Milton Street/Riverside Drive indicated a total of 50 pedestrians from Riverside Drive. The afternoon peak hour for pedestrians varied at each intersection between 3:00 p.m. and 5:00 p.m., or 30 minutes before the end of the school day to 1.5 hours after the end of the school day.

Automatic Traffic Recorder (ATR) counts are typically collected over a multi-day period to capture daily volumes, speeds, and classifications. To approximate hourly variation in traffic in the study area, ATR counts were collected over a 48-hour period from April 5 to April 6, 2022, at the following locations:

- Woodlawn Avenue
- North Elm Street north of Elm Street
- North Elm Street south of Elm Street
- Elm Street

The 85th percentile speed on Woodlawn Avenue was recorded at 34 miles per hour for eastbound and westbound vehicles, which exceeds the posted speed limit of 25 miles per hour. On North Elm Street north of Elm Street, the 85th percentile speed was recorded at 38 miles per hour for northbound and southbound vehicles. The 85th percentile speed on Elm Street west of North Elm Street was 34 miles per hour for eastbound and westbound vehicles. The posted speed limit on North Elm Street and Elm Street is 35 miles per hour.

The Average Daily Vehicle Traffic (ADT) on Woodlawn Avenue was 3,685 vehicles. The ADT on North Elm Street south of Elm Street southbound was 7,173 vehicles and 6,440 vehicles northbound. The ADT on North Elm Street north of Elm Street was 8,590 vehicles and 6,003 vehicles on Elm Street west of North Elm Street.

The directional distribution on North Elm Street is approximately 50/50 northbound/southbound over the entire day, with a 40/60 northbound/southbound distribution during the morning peak hour, and a 45/55 northbound/southbound distribution during the afternoon peak hour.

Weekday morning and afternoon peak hour volumes at each of the study area intersections are depicted in the traffic volume figure found in Appendix B. In addition, copies of the TMC and ATR traffic data have been attached to this report in Appendix F.

2.2.2 Parking Counts

To understand parking demand in the study area, parking occupancy counts were taken at the following locations during the school day:

- Woodlawn Avenue
- North Elm Street between Elm Street and Woodlawn Avenue (west side of the road)
- North Elm Street north of Elm Street (east and west sides of the road)
- Northampton High School main parking lot
- Northampton High School lower parking lot
- Parking Lot in southeast corner of Northampton High School
- Northampton High School handicapped spaces

Table 1 below details the parking occupancy during a typical school day. Parking occupancy count data is depicted in Appendix A.

Table 1 - Parking Occupancy Data

Location	Occupied	Available	Percent Occupied
Woodlawn Avenue	20	-	-
North Elm St between Elm St and Woodlawn Ave (west side)	4	2	67%
North Elm St North of Elm St (east side)	4	-	-
North Elm St North of Elm St (west side)	12	-	-
High School Main Parking Lot	159	36	82%
High School Lower Parking Lot	26	51	35%
Parking in SE Corner of High School	5	5	50%
High School Handicapped Spaces	4	3	57%

The eastern side of North Elm Street between Elm Street and Woodlawn Avenue had five unoccupied spaces due to the temporary parking ban.

2.2.3 Signal Warrant Analysis

In order to determine an appropriate recommendation to improve traffic operations in the vicinity of Northampton High School, signal warrant analysis as outlined by Manual on Uniform Traffic Control Devices (MUTCD) was performed at the intersections of North Elm Street and Elm Street, as well as North Elm Street and Woodlawn Avenue. Meeting signal warrants does not necessarily mean that a signal should be installed, but it may merit further consideration.

For this analysis, the major street for both intersections is considered to be North Elm Street while the minor streets are Woodlawn Avenue and Elm Street, respectively. All approaches are one lane and the critical approach speeds lie between 34 miles per hour and 38 miles per hour.

Based on the methodology outlined in the MUTCD, a traffic signal is warranted at both intersections. The intersections of North Elm Street and Woodlawn Avenue as well as North Elm Street and Elm Street were found to meet the criteria of Warrant 1, Eight-Hour Vehicular Volume at the Condition B, 100 percent level, Warrant 2, Four-Hour Vehicular Volume, and Warrant 3, Peak Hour. Warrant 4, Pedestrian Volume, was also assessed for these intersections; however, neither intersection was found to meet the pedestrian volume threshold.

Signal warrant analysis worksheets have been included in Appendix C.

2.2.4 Crash Analysis

Crash data was obtained from the City of Northampton Police Department as well as the MassDOT Interactive Mapping Portal and Crash Tracking (IMPACT) system for the most recent five years of available data, January 2017- July 2022 at the following locations:

- North Elm Street at Woodlawn Avenue
- North Elm Street at Elm Street
- Elm Street at Milton Street and Riverside Drive

A summary of the crash data and collision diagrams are included in Appendix B.

The intersection of North Elm Street and Woodlawn Avenue experienced an average of approximately one crash per year during the study period. The intersection experienced two single vehicle crashes, one rear end crash, one collision with a bicycle, and one crash where the manner of the collision is unknown. The collision with a bicycle occurred on October 8, 2021 resulted in a fatality. The bicyclist was traveling north on North Elm Street when a vehicle that had turned right onto North Elm Street from Woodlawn Avenue hit the bicyclist from behind. The collision occurred in daylight with clear conditions. The other three crashes involved property damage only and one had an unknown injury severity.

Following the bicyclist fatality, a survey was released from the Northampton High School Parent Teacher Organization (PTO) that included an option to provide detailed observations, experiences, and other comments about traffic safety issues in the area of the high school. Responses from this survey were reviewed and taken into consideration when determining recommended improvements. The survey responses were sent to Fuss and O'Neill via Northampton Department of Public Works.

The intersection of North Elm Street and Elm Street experienced an average of approximately two collisions per year during the study period. The intersection experienced five single vehicle crashes, three angle crashes, two pedestrian crashes, and one rear end crash. Of these twelve collisions, seven involved property damage only, three involved a non-fatal injury, and two had an unknown injury severity. One pedestrian collision occurred in September 2019 when a vehicle turning left from North Elm Street onto Elm Street hit a pedestrian in the crosswalk spanning Elm Street. The other pedestrian collision occurred in January 2022 when a vehicle stopped at the stop sign on Elm Street hit a crossing guard walking into the crosswalk spanning Elm Street.

The intersection of Elm Street and Milton Street/Riverside Drive experienced four collisions during the study period; two rear end crashes, one head on crash, and one sideswipe in the same direction. Of the four collisions, three involved property damage only and one involved a non-fatal injury.

The crash rate at the intersection of North Elm Street and Elm Street was found to be 0.36, the crash rate at the intersection of Elm Street and Woodlawn Avenue was found to be 0.15, and the crash rate at the intersection of Elm Street and Milton Street/Riverside Drive was found to be 0.12. Crash rates at each intersection were found to be below the District 2 average of 0.62 and the statewide average of 0.57 for unsignalized intersections.

The pedestrian collisions and cyclist fatality reported were a catalyst for this study effort. Improvements throughout the study area are recommended in the following sections of this report that are intended improve the safety of all roadway users, particularly cyclists and pedestrians.

3 Improvement Alternatives

Future improvement alternatives were analyzed with respect to existing safety conditions and traffic operations. The alternatives analyzed include the following:

- No-build
- Signalizing one or more intersections
- Making Woodlawn Avenue one-way eastbound
- Prohibiting the left turn from Elm Street onto North Elm Street
- Closing the intersection of Elm Street at North Elm Street
- Removing parking spaces on North Elm Street between Woodlawn Avenue and Elm Street
- Designating a student drop off zone in the Northampton High School parking lot

Upon review of the traffic volumes along Elm Street in the vicinity of the high school, it was determined that closing the intersection of North Elm Street and Elm Street is not a viable option. Elm Street, in conjunction with Nonotuck Street provides a vital connection for residential neighborhoods in the area, as well as an east/west connection to the high school. Closing this intersection and making Elm Street a dead-end roadway would put undue stress on the residential roads in the surrounding area; therefore, this alternative was not analyzed.

Additionally, implementing roundabouts along North Elm Street at Elm Street and Woodlawn Avenue was considered as an alternative; however, upon initial review this alternative was determined to not be viable due to the protected land associated with Child's Park on the southwest corner of Elm Street and North Elm Street.

Converting Woodlawn Avenue into a dead end was considered as an alternative but was deemed not to be a viable option due to impeding residential access and potentially negate the need for a signal at North Elm Street and Woodlawn Avenue which would hinder safety recommendations along the school frontage.

The assessed alternatives are expected to improve pedestrian and bicycle safety as well as improve vehicular congestion throughout the study area. Signalizing intersections establishes a priority within the intersection, creating dedicated time for each mode of transportation to traverse the intersection. For this alternative, the master intersection is designated as North Elm Street and Woodlawn.

Establishing Woodlawn Avenue as one-way eastbound is intended to limit the number of vehicles utilizing its intersection with North Elm Street, therefore minimizing the number of conflict points with surrounding vehicles, pedestrians and cyclists. Furthermore, removing the parking spaces on North Elm Street allows for a continuous bicycle lane on North Elm Street which significantly improves bicycle safety in the study area. Finally, a designated student drop off zone in the Northampton High School parking lot allows students to safely enter/exit the school building away from ambient vehicular traffic while also moving the traffic line off of these roads and into the parking lot.

4 Operational Analysis

4.1 Capacity Analysis

Capacity analysis for the study area intersections was conducted using Synchro Professional Software, version 11.0.

In discussing intersection capacity analyses results, three terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio (v/c) and level of service (LOS).

The v/c ratio is a ratio of the volume of traffic using an intersection to the total capacity of the intersection (the maximum number of vehicles that can utilize the intersection during an hour). The v/c ratio can be used to describe the percentage of capacity utilized by a single intersection movement, a combination of movements, an entire intersection approach, or the intersection as a whole.

LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle for unsignalized intersections and 80 seconds per vehicle for signalized intersections. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers.

In discussing two-way stop controlled unsignalized intersection capacity analyses, LOS is used to provide a description of the delay and operational characteristics of the turns from the minor street (stop sign controlled) to the major street and turns from the major street to the minor street. Through vehicles are not delayed by the minor street and do not experience delay; therefore, they are not rated with a level of service.

LOS is generally used to describe the operation (based on delay time) of both signalized and unsignalized intersections, while v/c ratio is applied to signalized intersections only. These definitions for v/c ratio and LOS, as well as the methodology for conducting signalized and unsignalized intersection capacity analyses, are taken from the "Highway Capacity Manual 6th Edition" published by the Transportation Research Board.

The v/c ratios, LOS, and delay are provided in the Synchro capacity analysis worksheets, which are included in Appendices D and E for the morning and afternoon peak hours, respectively.

Using the above referenced methodologies, weekday morning and afternoon peak hour capacity analyses were conducted for 2022 Existing conditions and 2029 Future conditions for the following alternatives:

- No-build
- Signalizing one or more intersections
- Making Woodlawn Avenue one-way eastbound
- Prohibiting eastbound left turns at the intersection of Elm Street and North Elm Street

Table 2 presents a summary of the levels of service and expected delay for the 2022 Existing condition, as well as each of the 2029 Future conditions listed above.

For the 2022 Existing conditions, the intersection of North Elm Street and Woodlawn Avenue operates at LOS B, and the intersection of North Elm Street and Elm Street operates at LOS F during the morning peak hour. While North Elm Street operates at LOS B or better in both conditions, the eastbound and westbound approaches on Elm Street and Woodlawn Avenue operate at LOS F and B, respectively. The intersection of North Elm Street and Woodlawn Avenue operates at LOS C while the intersection of North Elm Street and Elm Street operates at LOS F during the afternoon peak hour. Similarly to the morning peak hour, North Elm Street operates at LOS B or better in both conditions, the eastbound and westbound approaches on Elm Street and Woodlawn Avenue operate at LOS F and C, respectively. The delay incurred on these approaches is one of the primary sources of frustration for drivers needing to access the high school.

Under the 2029 No-Build condition, the intersection of North Elm Street and Woodlawn Avenue operates at LOS B during the morning peak hour and LOS C during the afternoon peak hour., additionally, the intersection of Elm Street and Milton Street/Riverside Drive operates at LOS B during both the weekday morning and afternoon peak hours. The intersection of North Elm Street and Elm Street operates at LOS F during both the morning and afternoon peak hours. Similar to the existing condition, North Elm Street maintains its operation at LOS B while the Elm Street approach continues to operate poorly with nearly three minutes of delay during the afternoon peak hour.

The Future condition Signalized Intersection alternative analyzed the addition of coordinated traffic signals at the intersections of North Elm Street and Woodlawn Avenue as well as North Elm Street and Elm Street.

With the implementation of the coordinated signal system, the intersection of North Elm Street and Woodlawn Avenue improves to LOS A and LOS B during the morning and afternoon peak hours, respectively, with the westbound approach on Elm Street improving to LOS D during both conditions. The intersection of North Elm Street and Elm Street improves to LOS C during both the morning and afternoon peak hours, with the eastbound approach improving to LOS D during both conditions. For this alternative, the intersections of Elm Street and Milton Street/Riverside Drive maintain their operation as stated in the 2029 No Build condition.

The Future condition Woodlawn Avenue One-Way alternative analyzed making Woodlawn Avenue one-way eastbound from North Elm Street to Prospect Street. Under this condition, the intersection of North Elm Street and Woodlawn Avenue improves to LOS A during the morning peak hour and LOS B during the afternoon peak hour. The remaining intersections maintain their operation as stated for the 2029 No Build condition for LOS.

The Future condition Elm Street Prohibited Left alternative analyzed prohibiting eastbound left turns from Elm Street onto North Elm Street. Under these conditions, the intersection of North Elm Street and Elm Street improves to LOS D during both the morning and afternoon peak hours, with the eastbound approach improving from LOS F to LOS D. The remaining intersections maintain their operation as stated for the 2029 No Build condition for LOS.

Table 2 – Delay and LOS Summary

		No-Build		Signalized		Woodlawn One-Way		Elm St Prohibited Left	
		Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
North Elm St at Woodlawn Ave									
AM Peak	Westbound Approach	13.5	B	45.2	D	-	-	13.5	B
	Northbound Approach	-	-	6.6	A	-	-	-	-
	Southbound Approach	9.4	A	4.9	A	9.8	A	9.5	A
PM Peak	Westbound Approach	17.8	C	48.6	D	-	-	17.8	C
	Northbound Approach	-	-	7.2	A	-	-	-	-
	Southbound Approach	9.8 s	A	4.2	A	10.3	B	10.0	B
North Elm St at Elm St									
AM Peak	Eastbound Approach	87.1	F	44.1	D	84.4	F	33.6	D
	Northbound Approach	11.7	B	5.8	A	11.7	B	11.7	B
	Southbound Approach	-	-	22.2	C	-	-	-	-
PM Peak	Eastbound Approach	200.8	F	49.4	D	187.0	F	33.3	D
	Northbound Approach	12.5	B	8.3	A	12.4	B	12.5	B
	Southbound Approach	-	-	22.4	C	-	-	-	-
Elm St at Northampton HS									
AM Peak	Northbound Approach	14.2	B	14.2	B	14.2	B	14.2	B
	Westbound Approach	3.2	A	3.2	A	3.2	A	3.2	A
PM Peak	Northbound Approach	13.7	B	13.7	B	13.7	B	13.7	B
	Westbound Approach	0.8	A	0.8	A	0.8	A	0.8	A
Elm St at Milton St and Riverside Dr									
AM Peak	Westbound Approach	4.3	A	4.3	A	4.3	A	4.3	A
	Northbound Approach	11.1	B	-	-	-	-	-	-
	Northeast Bound Approach	12.4	B	13.7	B	13.7	B	13.6	B
PM Peak	Westbound Approach	4.7	A	4.7	A	4.7	A	4.7	A
	Northbound Approach	13.0	B	-	-	-	-	-	-
	Northeast Bound Approach	11.4	B	14.6	B	14.6	B	14.6	B

4.2 Queue Analysis

Queue analysis for the study area intersections was conducted using Synchro Professional Software, version 11.0.

In discussing queue analyses results, three terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio (v/c) and level of service (LOS).

The 95th percentile vehicle queue lengths represent the maximum queue lengths that can be expected at each of the critical approach lanes of the study area intersections. Queue lengths are examined to determine if vehicle queues extend into adjacent intersections (i.e. exceed available storage length) or are contained within the distance between two intersections.

A summary of the queueing at each intersection can be found in Table 3, as well as in the analysis worksheets found in Appendices D and E for the morning and afternoon peak hours, respectively.

Under the 2029 No-Build condition, the majority of queueing at each intersection is contained within the available storage, except for the eastbound approach at the intersection of North Elm Street and Elm Street. Based on the analysis, eastbound queues at this intersection are found to extend past the Northampton High School entrance, approximately 325 feet west of the intersection.

With the implementation of the coordinated signal system, queueing is expected to increase by one or two car lengths; however, with the appropriate signal timings those queues are expected to empty with each cycle.

The Future condition Woodlawn Avenue One-Way alternative and the Future condition Elm Street Prohibited Left alternative maintain their operation as stated for the 2029 No Build condition for LOS.

Table 3 – 95th Percentile Queue Summary*

		No-Build	Signalized	Woodlawn One-Way	Elm St Prohibited Left	Available Storage
North Elm St at Woodlawn Ave						
AM Peak	Westbound Approach	25 ft	0 ft	-	25 ft	1900 ft
	Northbound Approach	0 ft	215 ft	0 ft	0 ft	350 ft
	Southbound Through	0 ft	60 ft	20 ft	0 ft	200 ft
	Southbound Left Turn	15 ft	*175 ft*	0 ft	20 ft	80 ft
PM Peak	Westbound Approach	45 ft	65 ft	-	45 ft	1900 ft
	Northbound Approach	0 ft	325 ft	0 ft	0 ft	350 ft
	Southbound Through	0 ft	155 ft	15 ft	0 ft	200 ft
	Southbound Left Turn	15 ft	45 ft	0 ft	20 ft	80 ft
North Elm St at Elm St						
AM Peak	Eastbound Approach	260 ft	95 ft	260 ft	145 ft	300 ft
	Northbound Left Turn	35 ft	*130 ft*	35 ft	35 ft	80 ft
	Northbound Through	0 ft	105 ft	0 ft	0 ft	200 ft
	Southbound Approach	0 ft	550 ft	0 ft	0 ft	1380 ft
PM Peak	Eastbound Approach	*405 ft*	105 ft	*390 ft*	145 ft	300 ft
	Northbound Left Turn	50 ft	*130 ft*	50 ft	50 ft	80 ft
	Northbound Through	0 ft	105 ft	0 ft	0 ft	200 ft
	Southbound Approach	0 ft	520 ft	0 ft	0 ft	1380 ft
Elm St at Northampton HS						
AM Peak	Eastbound Approach	0 ft	0 ft	0 ft	0 ft	455 ft
	Westbound Approach	5 ft	5 ft	5 ft	5 ft	300 ft
	Northbound Approach	10 ft	10 ft	10 ft	10 ft	30 ft
PM Peak	Eastbound Approach	0 ft	0 ft	0 ft	0 ft	455 ft
	Westbound Approach	5 ft	5 ft	5 ft	5 ft	300 ft
	Northbound Approach	10 ft	10 ft	10 ft	10 ft	30 ft
Elm St at Milton St and Riverside Dr						
AM Peak	Westbound Approach	10 ft	10 ft	10 ft	10 ft	455 ft
	Northbound Approach	5 ft	-	-	-	300 ft
	Northeast Bound Approach	25 ft	35 ft	35 ft	35 ft	715 ft
PM Peak	Westbound Approach	10 ft	10 ft	10 ft	10 ft	455 ft
	Northbound Approach	15 ft	-	-	-	300 ft
	Northeast Bound Approach	15 ft	40 ft	40 ft	40 ft	715 ft

*Queue lengths have been rounded to the nearest five feet

Italics indicate that the 95th Percentile queue exceeds available storage length

5 Recommendations and Conclusions

5.1 Recommendations

As a result of the study efforts performed, Fuss and O'Neill proposes the following recommendations that are depicted on the concept plan found in Appendix A.

- ***Install traffic signals at both study intersections along North Elm Street and implement a pedestrian refuge island on the Elm Street approach.***
  As shown in Table 2, this will substantially improve the LOS and the delay along North Elm Street. Additionally, each of these intersections have extensive crosswalk lengths and a heavy volume of pedestrians before and after school hours. Signalizing the two intersections significantly increases the safety of pedestrians crossing the road due to the exclusive pedestrian phase included in the signal timings.

- ***Remove the existing five parking spaces on the east side of North Elm Street between Woodlawn Avenue and Elm Street and implement a bicycle lane in its place.***
  Pick up and drop off operations at the high school lead to a higher volume of pedestrians crossing North Elm Street during these times. These five spaces were not usable at the time of the parking occupancy counts and parking was not observed to be at full capacity. Additionally, there is a gap in the bicycle lane network between Woodlawn Avenue and Elm Street and implementing a bicycle lane here would bridge that gap.

- ***Construct a bump out on the west side of North Elm Street to replace the existing 50-foot-long painted bump out south of Elm Street.***
  This improvement will reinforce the "No Parking" restriction in the area to ensure adequate sight distance for vehicles approaching the crosswalk between the high school and Childs Park. No change is recommended to the six existing parking spaces.

- ***Create a pickup and drop off lane inside the Northampton High School parking lot and implement one-way traffic during pick up and drop off times.***
  During these times, vehicles will enter the parking lot from Milton Street, travel one way through the northernmost parking lot lane, drop off in the circle outside the front entrance, and exit onto Elm Street. Accommodating student pick up and drop off inside the school parking lot lessens the impacts of student pick up and drop off along North Elm Street and Elm Street.

- ***Reopen the section of road that passes in front of the high school connecting Elm Street to North Elm Street and construct a one-way bus lane for student pick up and drop off.***
  This lane connects to the signalized intersection of North Elm Street and Woodlawn Avenue and ensures the buses can exit onto North Elm Street with minimal delays. This lane is easily blocked off with a cone when not in use for student pick up and drop off to ensure it is not utilized by vehicles not associated with the high school. Under this condition, the bus stop located across the street from Woodlawn Avenue is recommended to be relocated to be across the street from the northbound bus stop.

- ***Create a dedicated parking lane on the north side of Woodlawn Avenue.***
  Shifting the centerline of Woodlawn Avenue south to provide two 11-foot travel lanes and a seven-foot wide dedicated parking lane will continue to allow for parking without encroachment while maintaining the existing edge of pavement.

- ***Add a pedestrian refuge island between Riverside Drive and Milton Street.***
  A pedestrian island at this intersection shortens the crossing distance for pedestrians looking to continue along Elm Street across both Milton Street and Riverside Drive. This island also provides a physical barrier between vehicular traffic on Milton Street and Riverside Drive.

- ***Realign Riverside Drive and shift the stop bar north towards Elm Street.***
  Realigning Riverside Drive to be perpendicular to Elm Street and shifting the stop bar north eliminates sight distance concerns for northbound drivers at the intersection.

- ***Turn Milton Street into a one-way between Elm Street and Ormond Drive.***
  Converting Milton Street into a one-way southbound road decreases conflict points at its intersection with Riverside Drive and Elm Street while also allowing space for a bicycle lane.

The conceptual design plans are included as an attachment to this report.

The total cost of the signalization improvements, including pedestrian curb ramps, signage, and pavement markings, is expected to be approximately $3 million.

5.2 Conclusions

The intention of this study of the North Elm Street area is to gather and analyze traffic data and develop alternatives that will increase safety and transportation conditions in this area.

Crash analysis indicates that each intersection in the study area experienced an average of approximately one to two crashes per year over the past five and a half years. One of these crashes involved a bicyclist fatality at the intersection of North Elm Street and Woodlawn Avenue. There were also two non-fatal pedestrian collisions at the intersection of North Elm Street and Elm Street. It is anticipated that the implementation of a traffic signal could mitigate some of these collisions by introducing traffic control on North Elm Street and regulating vehicle right of way.

Traffic counts indicate high pedestrian volumes in the area, immediately before and after school hours. Speed data measured the 85th percentile speed on Woodlawn Avenue and Elm Street to be 34 miles per hour and on North Elm Street south of Elm Street to be 32 miles per hour and north of Elm Street to be 38 miles per hour.

Capacity analysis indicates that under 2029 No Build conditions, each intersection approach operates at LOS C or better with the exception of the Elm Street approach to the intersection of North Elm Street and Elm Street which operates at LOS F. Queueing is contained within available storage with the exception of the Elm Street approach to the intersection of North Elm Street and Elm Street where queues extend past the Northampton High School entrance.

Under the 2029 Signalized Intersection conditions, each intersection approach operates at LOS D or better, and queues do not extend into the adjacent intersections.

It is recommended to signalize the intersections of North Elm Street at Woodlawn Avenue and North Elm Street at Elm Street, remove the parking spaces on the eastern side of North Elm Street between Woodlawn Avenue and Elm Street and replace them with bicycle lanes on both sides of the road, provide student pick up and drop off within the Northampton High School parking lot, and turn Milton Street into a one-way southbound road between Elm Street and Ormond Drive.

FUSS & O'NEILL

Appendix A

Plans

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL

SEAL

SCALE:
HORZ.: 1"=50'
VERT.:
DATUM:
HORZ.:
VERT.:
100 50 0 100
GRAPHIC SCALE

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CITY OF NORTHAMPTON

STUDY AREA

NORTH ELM STREET AREA TRAFFIC STUDY

NORTHAMPTON MASSACHUSETTS

PROJ. No.: 20091145.B10
DATE: NOVEMBER 2022

GI-01

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL

SEAL

SCALE:
HORZ.: 1" = 30'
VERT.:
DATUM:
HORZ.:
VERT.:
60 30 0 60
GRAPHIC SCALE

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CITY OF NORTHAMPTON

CONCEPT PLAN

NORTH ELM STREET AREA TRAFFIC STUDY

NORTHAMPTON MASSACHUSETTS

PROJ. No.: 20091145.B10
DATE: OCTOBER 2022

CON-01

File: J:\DWG\P2009\11445\B10\Civil\Plan\20091145B10_CON01.dwg Layout: BASE MAP Plotted: 2022-12-01 11:59 AM Saved: 2022-12-01 11:43 AM User: Tlord
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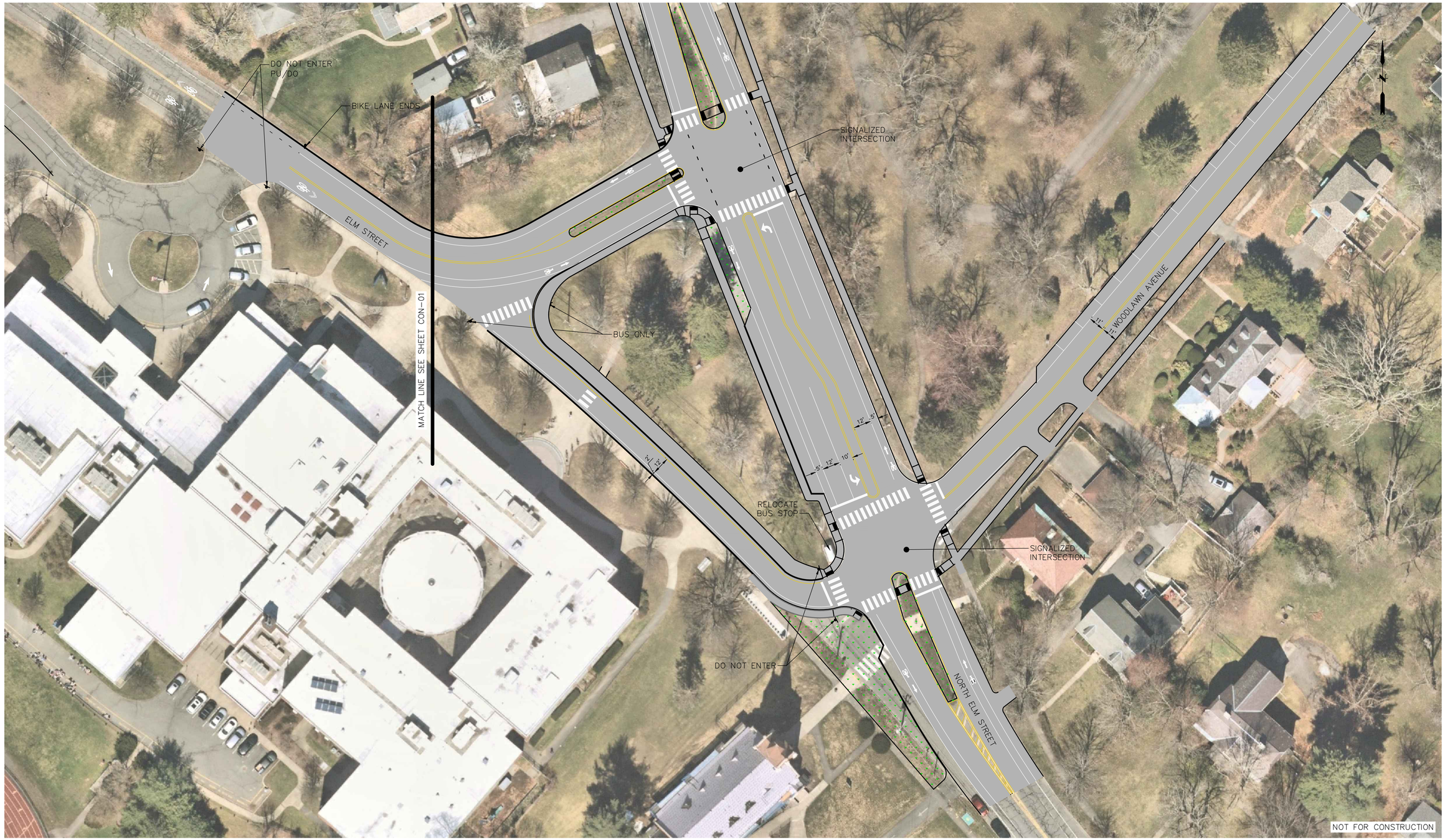

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

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SEAL

SCALE:
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DATUM:
HORZ.:
VERT.:
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GRAPHIC SCALE

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CITY OF NORTHAMPTON

CONCEPT PLAN

NORTH ELM STREET AREA TRAFFIC STUDY

NORTHAMPTON MASSACHUSETTS

PROJ. No.: 20091145.B10
DATE: OCTOBER 2022

CON-02

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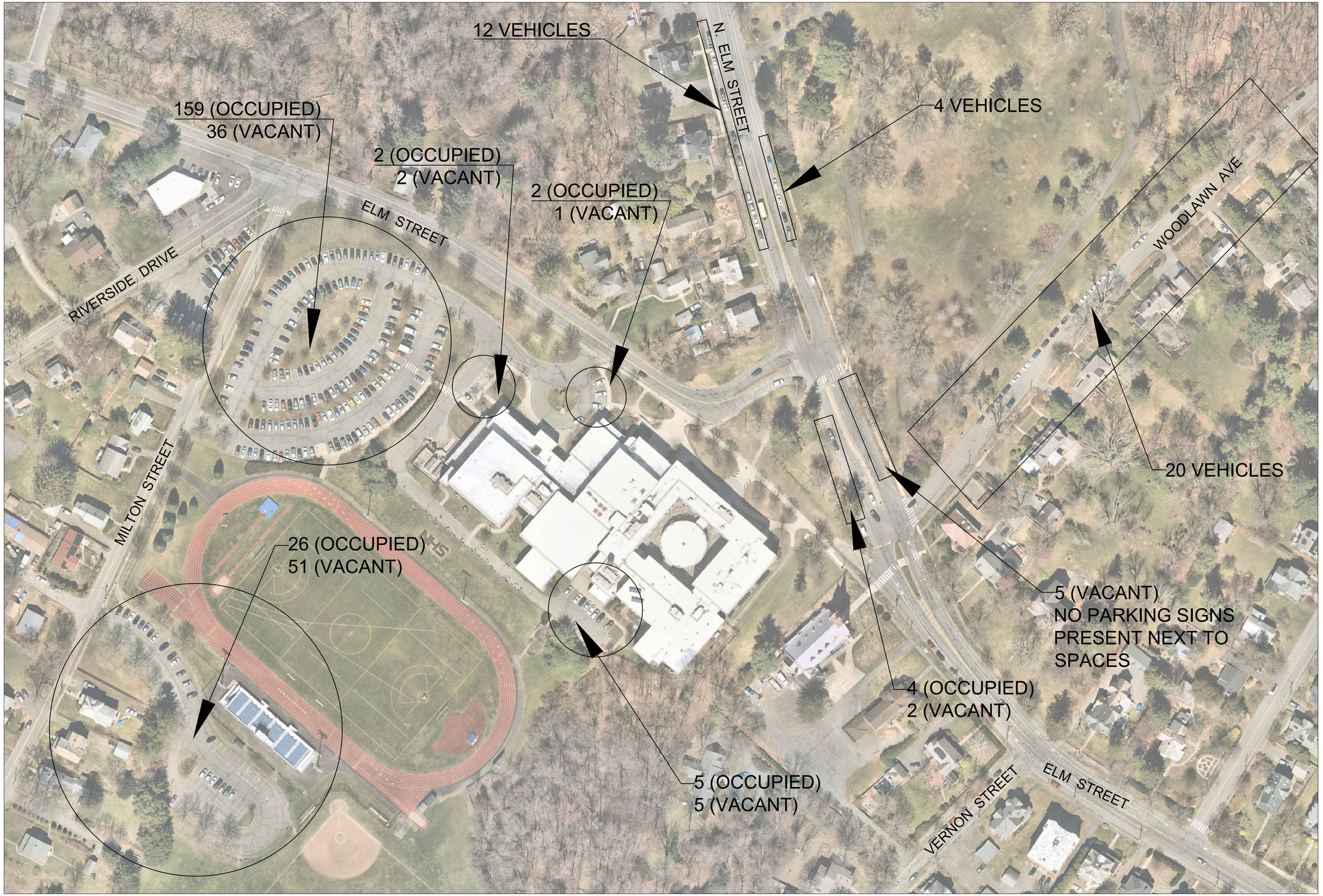

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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

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VERT.:
DATUM: HORZ.:
VERT.:
0
GRAPHIC SCALE

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CITY OF NORTHAMPTON

PARKING OCCUPANCY DATA

NORTH ELM ST AREA TRAFFIC STUDY

NORTHAMPTON MASSACHUSETTES

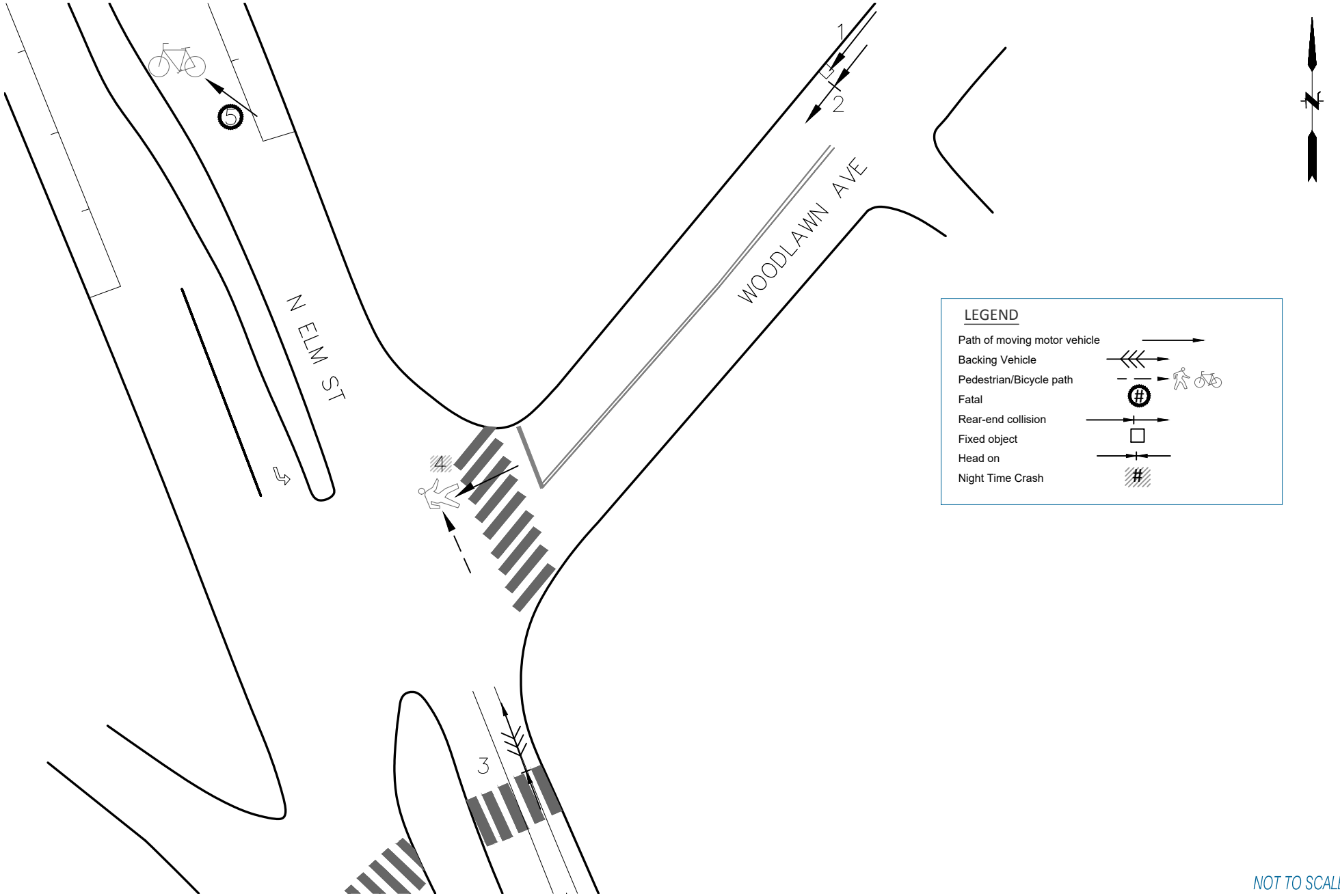
PROJ. No.: 20091145.B10
DATE: 05/13/2022

PKG-01

FUSS & O'NEILL

Appendix B

Figures and Tables



NOT TO SCALE

FIGURE 1: COLLISION DIAGRAM

INTERSECTION OF NORTH ELM STREET AND WOODLAWN AVENUE
TIME PERIOD ANALYZED: JANUARY 01, 2017 - JULY 31, 2022

Location: NORTHAMTPON, MA
Source: IMPACT/ Police Crash Reports
Date Prepared: SEPTEMBER 2022
Prepared By: AJT

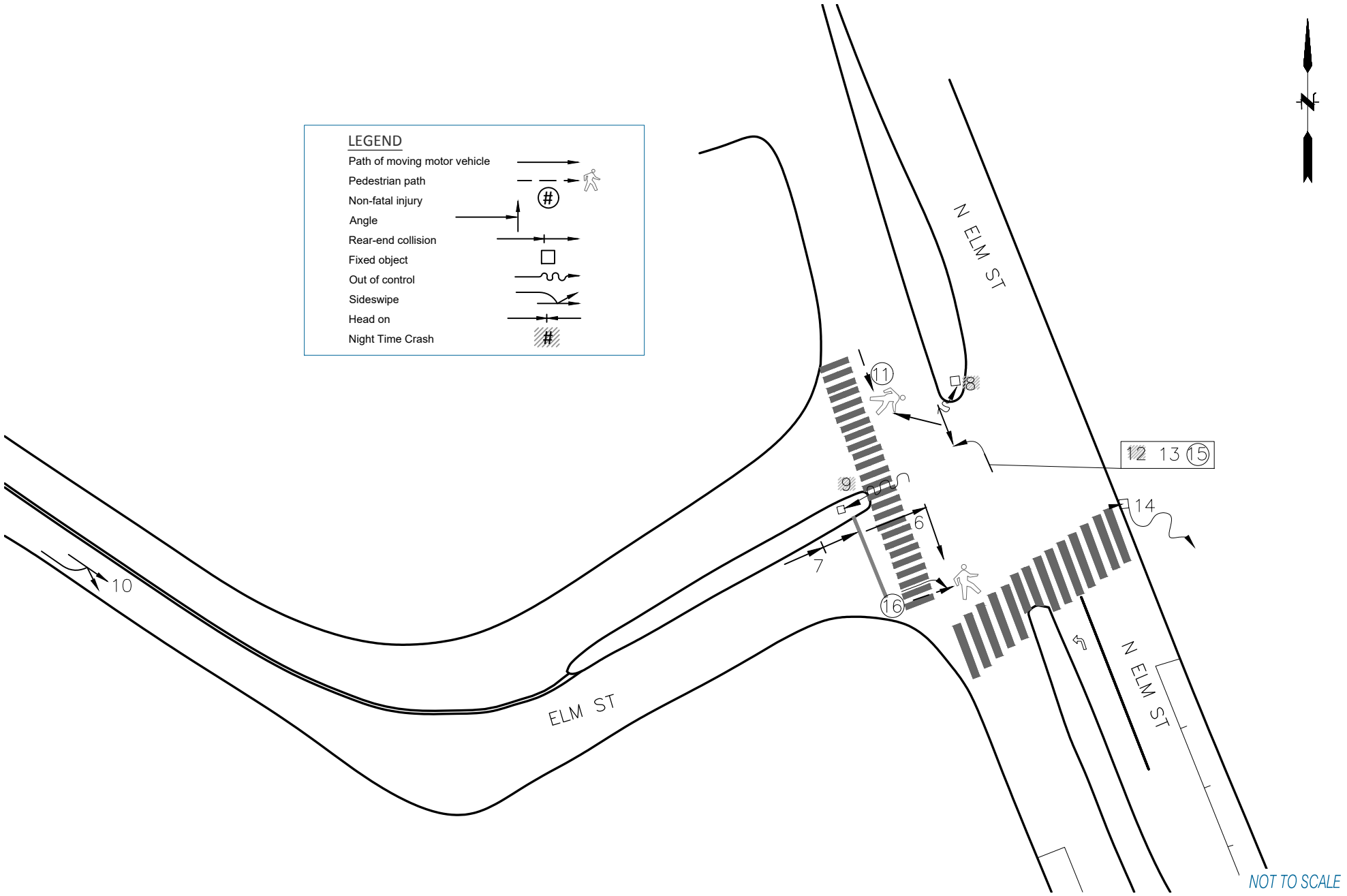
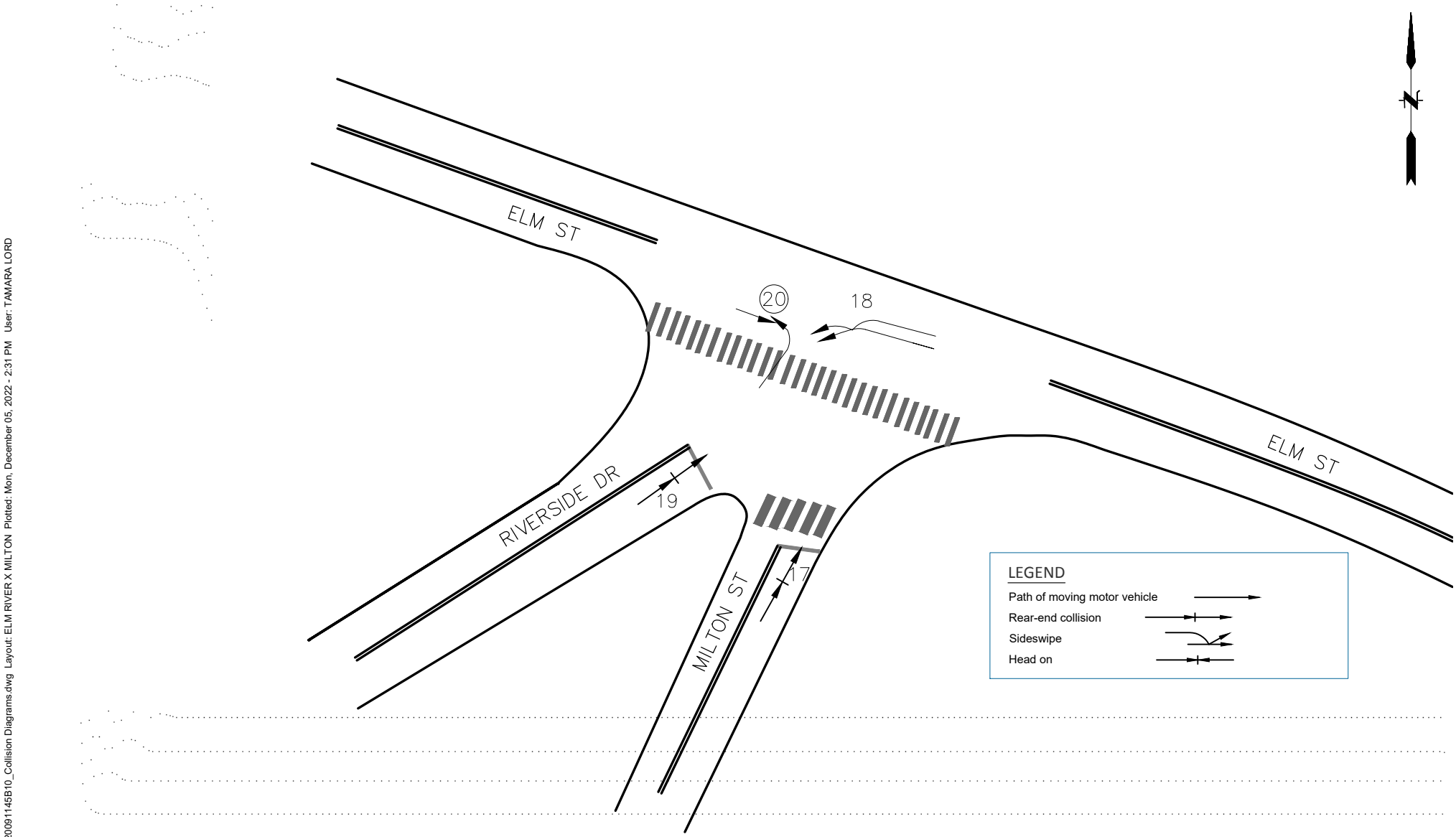


FIGURE 2: COLLISION DIAGRAM

INTERSECTION OF ELM STREET AND NORTH ELM STREET
TIME PERIOD ANALYZED: JANUARY 01, 2017 - JULY 31, 2022

Location: NORTHAMPTON, MA
Source: IMPACT/ Police Crash Reports
Date Prepared: SEPTEMBER 2022
Prepared By: AJT



NOT TO SCALE

FIGURE 3: COLLISION DIAGRAM

INTERSECTION OF ELM STREET AND RIVERSIDE DRIVE AND MILTON STREET

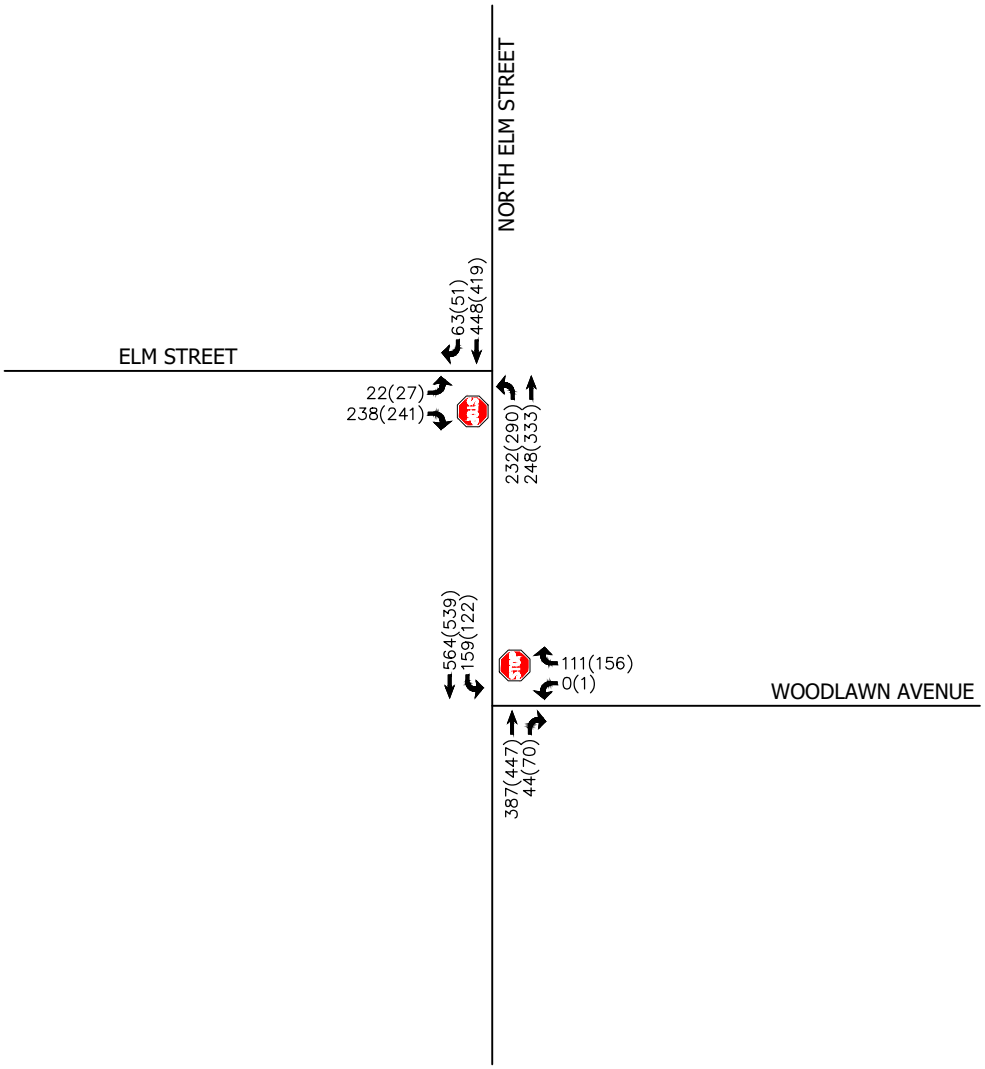
TIME PERIOD ANALYZED: JANUARY 01, 2017 - JULY 31, 2022

Location: NORTHAMPTON, MA
Source: IMPACT/ Police Crash Reports
Date Prepared: SEPTEMBER 2022
Prepared By: AJT

CRASH DATA SUMMARY - JANUARY 2017-JULY 2022
STUDY AREA INTERSECTIONS

Criteria	North Elm St at Elm St	North Elm St at Woodlawn Ave	Elm St at Milton St and Riverside Dr
YEAR			
2017	1	0	1
2018	1	1	2
2019	3	1	0
2020	3	1	0
2021	2	2	1
2022	2	0	0
Total	12	5	4
Average No. of Crashes	2.00	0.83	0.33
Crash Rate	0.36	0.15	0.12
TYPE			
Angle	3	0	0
Rear-End	1	1	2
Head-On	0	0	1
Sideswipe	1	0	1
Pedestrian/Bicycle	2	1	0
Collision w/ Parked Car	0	0	0
Single Vehicle Crash	5	2	0
Unknown/Other	0	1	0
Total	12	5	4
SEVERITY			
Property Damage Only	7	3	3
Non-fatal Injury	3	0	1
Fatality	0	1	0
Unknown/Other	2	1	0
Total	12	5	4
WEATHER			
Clear	7	1	3
Wet	1	0	0
Snow/Ice	0	1	0
Clouds	0	0	0
Fog	0	0	0
Unknown/Other	4	3	1
Total	12	5	4
LIGHTING			
Light	7	4	4
Dark	5	1	0
	12	5	4
TIME			
Weekday 7:30 AM - 9:30 AM	2	0	1
Mid Day 9:31 AM - 3:29PM	1	2	1
Weekday 3:30 PM - 5:30 PM	4	1	1
Other	5	2	1
Total	12	5	4

Statewide Average Crash Rates:	0.78	Signalized Intersections
	0.57	Unsignalized Intersections
District 2 Average Crash Rates:	0.89	Signalized Intersections
	0.62	Unsignalized Intersections



XXX(XXX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY PM PEAK HOUR)

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FIGURE 4: 2022 EXISTING TRAFFIC VOLUMES

PROJ. NO: 20091145.B10 NORTH ELM STREET TRAFFIC AUGUST 2022

Appendix C

Figures and Tables

FUSS & O'NEILL, INC.
1550 Main St
Springfield, MA 01108

Prep. By:	Date:	Chk. by:	Date:	Project No:
TSL	08/24/2022			20091145_B10

Traffic Signal Warrants
North Elm St/Elm St in Northampton, MA

Sheet No: 1 of 4

Major St: North Elm Street — Critical Approach Speed: 38 mph — Count Date: 4/5/2022

1 Lane: Y — 2 or more:

Minor St: Elm Street — Critical Approach Speed: 35 mph — Count Date: 4/5/2022

1 Lane: Y — 2 or more: — Existing Control: STOP: X — Signal:

Critical speed of major street traffic >= 40 mph	or	Rural (R)
In built up area of isolated community of <= 10,000 pop.		Rural (R)
Otherwise if neither of the above statements are true	U	Urban (U)

WARRANT 1 - Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

100% Satisfied for 8 hours? **No**
80% Satisfied for 8 hours? **Yes**
70% Satisfied for 8 hours? **Yes** Applies to Rural Only
56% Satisfied for 8 hours? **Yes** Applies to Rural Only

Number of lanes on each approach		VPH on major st (both approaches)				VPH on higher vol minor st approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

	Hour	Major (both app.)	Minor (higher app.)
1st	4:30	1328	181
2nd	3:30	1219	202
3rd	7:15	1159	182
4th	8:15	1068	171
5th	5:30	1019	134
6th	11:15	978	135
7th	10:15	908	130
8th	9:15	799	123

OR

Condition B - Interrupton of Continuous Traffic

100% Satisfied for 8 hours? **Yes**
80% Satisfied for 8 hours? **Yes**
70% Satisfied for 8 hours? **Yes** Applies to Rural Only
56% Satisfied for 8 hours? **Yes** Applies to Rural Only

Number of lanes on each approach		VPH on major st (both approaches)				VPH on higher vol minor st approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

	Hour	Major (both app.)	Minor (higher app.)
1st	4:30	1328	181
2nd	3:30	1219	202
3rd	7:15	1159	182
4th	8:15	1068	171
5th	5:30	1019	134
6th	11:15	978	135
7th	10:15	908	130
8th	9:15	799	123

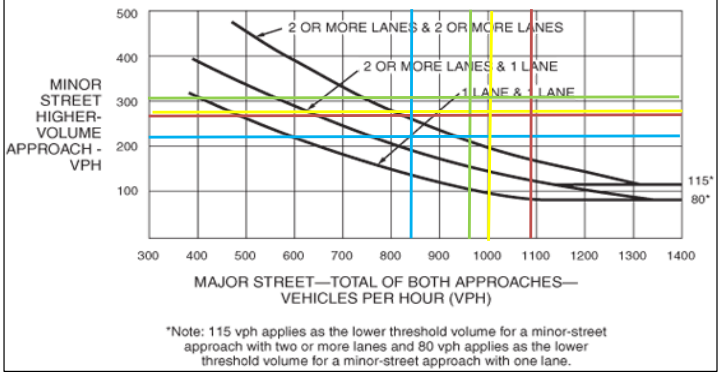
Warrant 1 is met when:	**Is Warrant 1 met?**
Either Condition A or Condition B are met at the 100% level.	**Yes**
Both Conditions A and B are met at the 80% level.	**Yes**
Either Condition A or Condition B are met at the 70% level where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.	**Yes**
Both Condition A and Condition B are met at the 56% level where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.	**Yes**

WARRANT 2 - Four- Hour Vehicular Volume

Number of lanes on each approach	
Major Street	Minor Street
1	1
2 or more	1
2 or more	2 or more
1	2 or more

Highest Hours	Above Fig 4C-1?	Above Fig 4C-2?	Hour	Major (both app.)	Minor (higher app.)
1st	Yes	Yes	15:00	1093	268
2nd	Yes	Yes	16:00	1005	273
3rd	Yes	Yes	7:30	967	305
4th	Yes	Yes	8:30	841	216

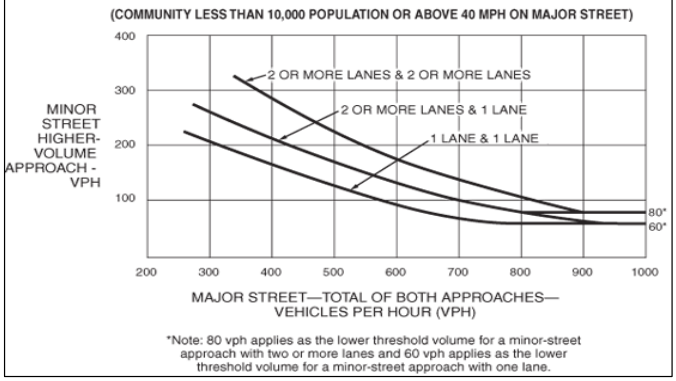
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 2 is met when:	**Is Warrant 2 met?**
At least four hours plot above the appropriate decision curve in Figure 4C-1	**Yes**
At least four hours plot above the appropriate decision curve in Figure 4C-2 where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.	**Yes**

FUSS & O'NEILL, INC. 1550 Main St Springfield, MA 01108		Prep. By:	Date:	Chk. by:	Date:	Project No:
		TSL	08/24/2022			20091145_B10
	Traffic Signal Warrants North Elm St/Elm St in Northampton, MA					Sheet No: 3 of 4

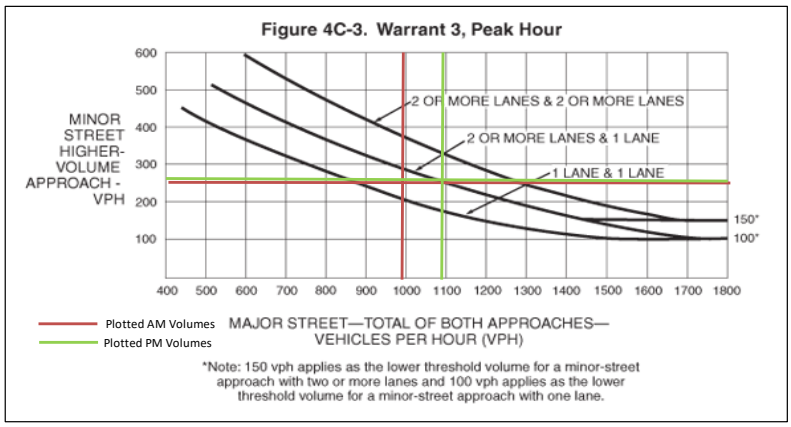
WARRANT 3 - Peak Hour

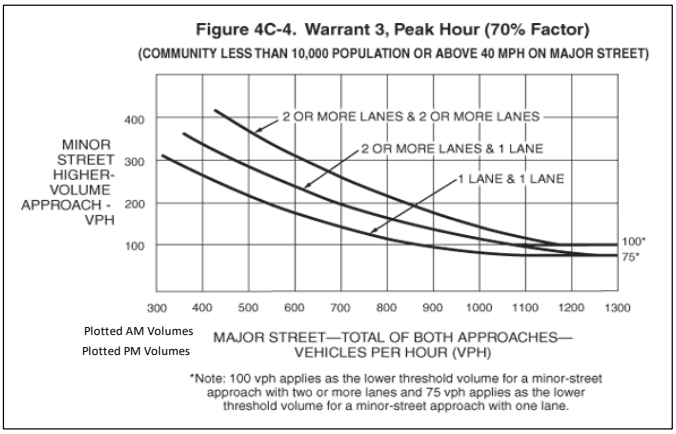
Warrant 3A Peak Hour Volume

Does at least one hour plot above the appropriate decision curve in Figure 4C-3? **Yes**

PKHR	Hour	Major (both app.)	Minor (higher app.)
AM	8:00	991	260
PM	15:00	1093	268

Does at least one hour plot above the appropriate decision curve in Figure 4C-3 where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.? **Yes**





OR

Warrant 3B Peak Hour Volume Delay

Are all three SATISFIED? No

	SATISFIED YES	SATISFIED NO
The total delay experienced by traffic on a side street controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; and		X
The volume on the side-street approaches equals or exceeds 100 vph for a one-lane approach or 150 vph for a two lane approach; and	X	
The total entering volume serviced during this hour equals or exceeds 800 vph for intersections with four (or more) approaches or 650 vph for intersections with three approaches.	X	

WARRANT 4 - Pedestrian Volume

Warrant 4A Pedestrian Four-Hour Volume

Do 4 hours during the day plot above the curve in Figure 4C-5 (4C-6 for Speed>35mph or Population <10K) **No**

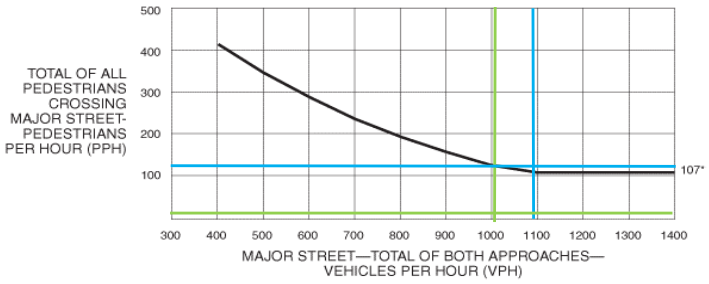
Warrant 4B Pedestrian Peak Hour

Does at least one hr plot above the curve in Figure 4C-7? (4C-8 For Speed>35mph or Population <10K) **No**

Highest Hours	Hour	Major St (both app.) (Veh)	Minor St (higher app.)	Peds Xing Major Street	Above Fig 4C-5 (or 4C-6 for rural)?	Above Fig 4C-7 (or 4C-8 for rural)?
1st	15:00	1093	268	121	No	N/A
2nd	16:00	1005	273	21	No	N/A
3rd	7:30	967	305	12	No	N/A
4th	8:30	841	216	107	No	N/A

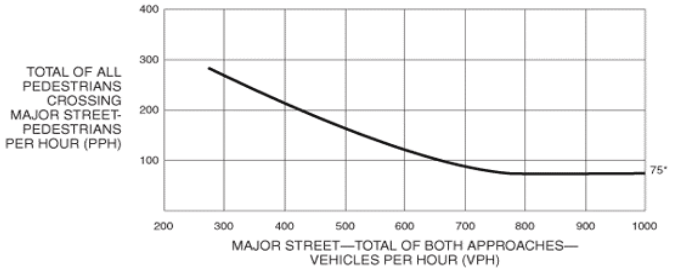
*Pedestrian counts were only done during TMC hours

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



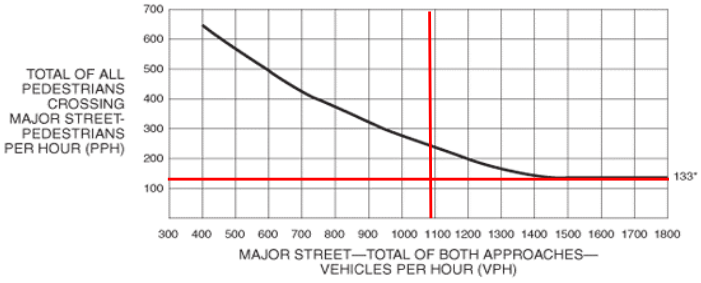
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



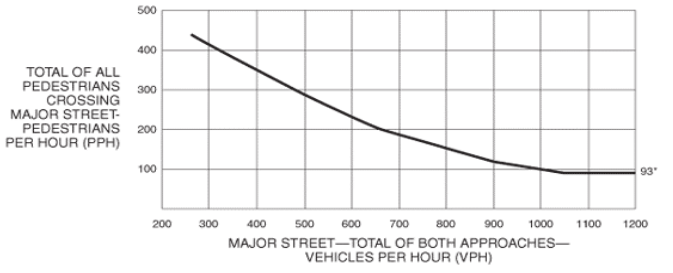
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Warrant is met when:	**Is Warrant 4 met?**
At least four hours plot above the appropriate decision curve in Figure 4C-5 or 4C-6?	**No**
At least one hour plot above the appropiate decision curve in Figure 4C-7 or 4C-8?	**No**

FUSS & O'NEILL, INC.
1550 Main St
Springfield, MA 01108

Prep. By:	Date:	Chk. by:	Date:	Project No:
TSL	08/24/2022			20091145_B10

Traffic Signal Warrants
North Elm St/Woodlawn Ave in Northampton, MA

Sheet No: 1 of 4

Major St: North Elm Street — Critical Approach Speed: 38 mph — Count Date: 4/5/2022

1 Lane: Y — 2 or more:

Minor St: Woodlawn Avenue — Critical Approach Speed: 34 mph — Count Date: 4/5/2022

1 Lane: Y — 2 or more: — Existing Control: STOP X — Signal

Critical speed of major street traffic >= 40 mph		or Rural (R)
In built up area of isolated community of <= 10,000 pop.		Rural (R)
Otherwise if neither of the above statements are true	U	Urban (U)

WARRANT 1 - Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume

100% Satisfied for 8 hours? **No**
80% Satisfied for 8 hours? **No**
70% Satisfied for 8 hours? **No** Applies to Rural Only
56% Satisfied for 8 hours? **No** Applies to Rural Only

Number of lanes on each approach		VPH on major st (both approaches)				VPH on higher vol minor st approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

	Hour	Major (both app.)	Minor (higher app.)
1st	4:30	1328	155
2nd	3:30	1219	153
3rd	7:15	1159	82
4th	8:15	1068	147
5th	5:30	1019	146
6th	11:15	978	114
7th	10:15	908	101
8th	9:15	799	87

OR

Condition B - Interrupton of Continuous Traffic

100% Satisfied for 8 hours? **Yes**
80% Satisfied for 8 hours? **Yes**
70% Satisfied for 8 hours? **Yes** Applies to Rural Only
56% Satisfied for 8 hours? **Yes** Applies to Rural Only

Number of lanes on each approach		VPH on major st (both approaches)				VPH on higher vol minor st approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

	Hour	Major (both app.)	Minor (higher app.)
1st	4:30	1328	155
2nd	3:30	1219	153
3rd	7:15	1159	82
4th	8:15	1068	147
5th	5:30	1019	146
6th	11:15	978	114
7th	10:15	908	101
8th	9:15	799	87

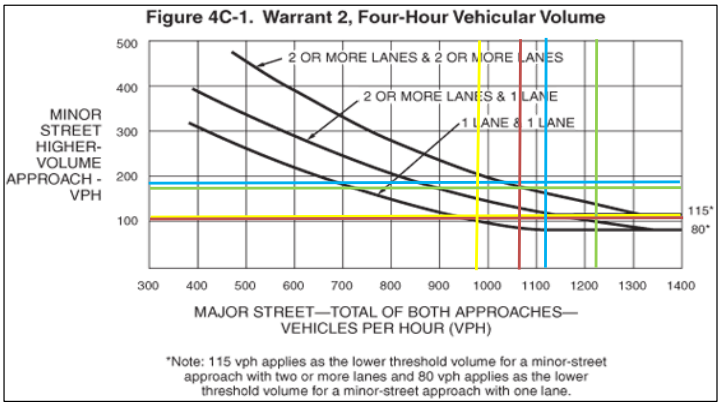
Warrant 1 is met when:	**Is Warrant 1 met?**
Either Condition A or Condition B are met at the 100% level.	**Yes**
Both Conditions A and B are met at the 80% level.	**No**
Either Condition A or Condition B are met at the 70% level where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.	**Yes**
Both Condition A and Condition B are met at the 56% level where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.	**No**

WARRANT 2 - Four- Hour Vehicular Volume

Number of lanes on each approach	
Major Street	Minor Street
1	1
2 or more	1
2 or more	2 or more
1	2 or more

Highest Hours	Above Fig 4C-1?	Above Fig 4C-2?	Hour	Major (both app.)	Minor (higher app.)
1st	Yes	Yes	7:30	1164	103
2nd	Yes	Yes	8:30	986	109
3rd	Yes	Yes	3:00	1222	184
4th	Yes	Yes	4:00	1121	190

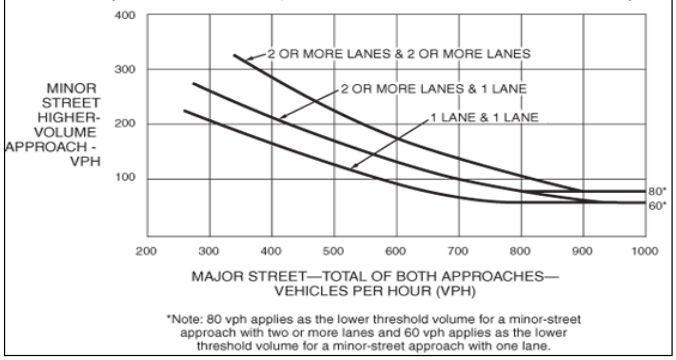
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 2 is met when:	**Is Warrant 2 met?**
At least four hours plot above the appropriate decision curve in Figure 4C-1	**Yes**
At least four hours plot above the appropriate decision curve in Figure 4C-2 where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.	**Yes**

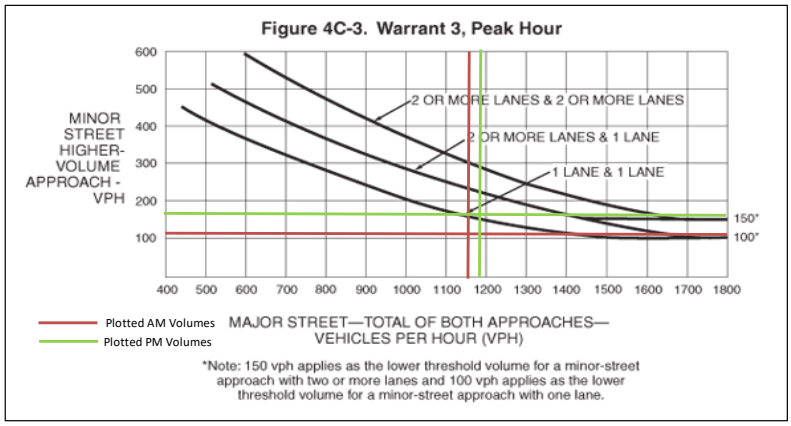
WARRANT 3 - Peak Hour

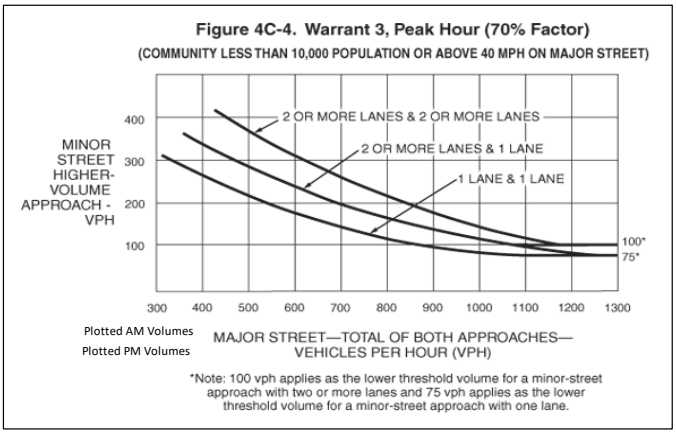
Warrant 3A Peak Hour Volume

Does at least one hour plot above the appropriate decision curve in Figure 4C-3? **Yes**

PKHR	Hour	Major (both app.)	Minor (higher app.)
AM	7:45	1154	111
PM	15:00	1178	157

Does at least one hour plot above the appropriate decision curve in Figure 4C-3 where Rural community (<10,000 and isolated) or Major Street Approach is >=40mph.? **Yes**





OR

Warrant 3B Peak Hour Volume Delay

Are all three SATISFIED? No

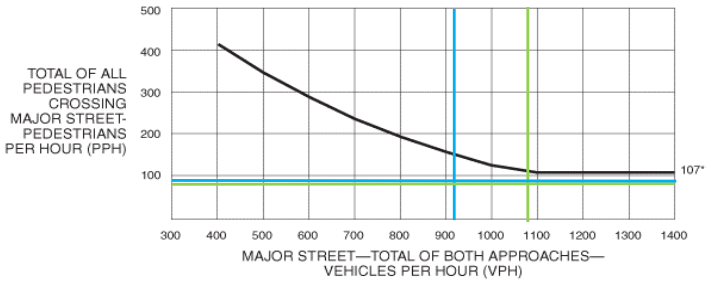
	SATISFIED	
	YES	NO
The total delay experienced by traffic on a side street controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach and five vehicle-hours for a two-lane approach; and		X
The volume on the side-street approaches equals or exceeds 100 vph for a one-lane approach or 150 vph for a two lane approach; and	X	
The total entering volume serviced during this hour equals or exceeds 800 vph for intersections with four (or more) approaches or 650 vph for intersections with three approaches.	X	

WARRANT 4 - Pedestrian Volume

	Highest Hours	Hour	Major St (both app.) (Veh)	Minor St (higher app.)	Peds Xing Major Street	Above Fig 4C-5 (or 4C-6 for rural)?	Above Fig 4C-7 (or 4C-8 for rural)?
Warrant 4A Pedestrian Four-Hour Volume							
Do 4 hours during the day plot above the curve in Figure 4C-5 (4C-6 for Speed>35mph or Population <10K) **No**	1st	7:30	1164	103	71	No	N/A
	2nd	8:30	986	109	17	No	N/A
Warrant 4B Pedestrian Peak Hour	3rd	3:00	1222	184	64	No	N/A
Does at least one hr plot above the curve in Figure 4C-7? (4C-8 For Speed>35mph or Population <10K) **No**	4th	4:00	1121	190	80	No	N/A

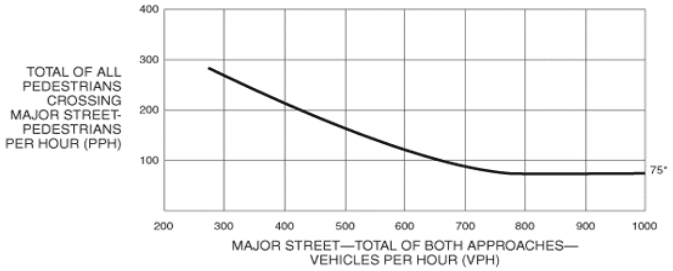
*Pedestrian counts were only done during TMC hours

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



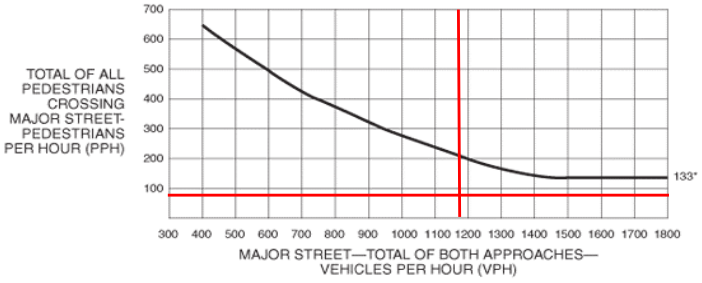
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



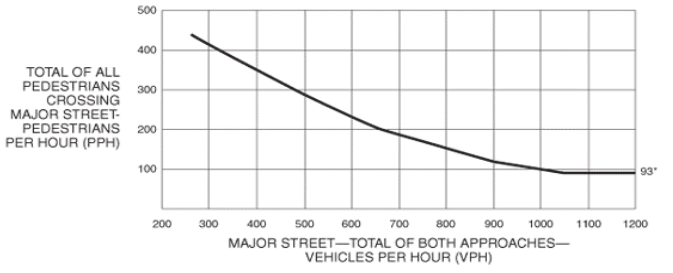
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

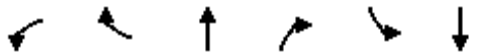
Warrant is met when:	**Is Warrant 4 met?**
At least four hours plot above the appropriate decision curve in Figure 4C-5 or 4C-6?	**No**
At least one hour plot above the appropiate decision curve in Figure 4C-7 or 4C-8?	**No**

Appendix D

Intersection Capacity Analysis Worksheets - Morning Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	111	387	44	159	564
Future Volume (vph)	0	111	387	44	159	564
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.986			
Flt Protected					0.950	
Satd. Flow (prot)	1719	0	1775	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	1719	0	1775	0	1888	1987
Link Speed (mph)	25		35			35
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.1			2.4
Confl. Peds. (#/hr)	9			28		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	121	421	48	173	613
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	0	469	0	173	613
Sign Control	Stop		Free			Free

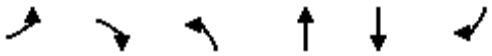
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	111	387	44	159	564
Future Volume (Veh/h)	0	111	387	44	159	564
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	121	421	48	173	613
Pedestrians	28		9			
Lane Width (ft)	14.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	3		1			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1441	473			497	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1441	473			497	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	79			83	
cM capacity (veh/h)	117	573			1034	

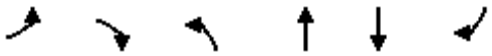
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	121	469	173	613
Volume Left	0	0	173	0
Volume Right	121	48	0	0
cSH	573	1700	1034	1700
Volume to Capacity	0.21	0.28	0.17	0.36
Queue Length 95th (ft)	20	0	15	0
Control Delay (s)	13.0	0.0	9.2	0.0
Lane LOS	B		A	
Approach Delay (s)	13.0	0.0	2.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	22	238	232	248	448	63
Future Volume (vph)	22	238	232	248	448	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.876				0.983	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1842	0	1888	1987	2075	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1842	0	1888	1987	2075	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.2	3.2	
Confl. Peds. (#/hr)	5		90			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	259	252	270	487	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	283	0	252	270	555	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	238	232	248	448	63
Future Volume (Veh/h)	22	238	232	248	448	63
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	259	252	270	487	68
Pedestrians	90				5	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	11				1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1390	611	645			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1390	611	645			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	75	41	70			
cM capacity (veh/h)	96	437	833			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	283	252	270	555
Volume Left	24	252	0	0
Volume Right	259	0	0	68
cSH	336	833	1700	1700
Volume to Capacity	0.84	0.30	0.16	0.33
Queue Length 95th (ft)	187	32	0	0
Control Delay (s)	53.0	11.2	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	53.0	5.4		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	13.1		
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	265	22	95	200	27	28
Future Volume (vph)	265	22	95	200	27	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.931	
Flt Protected				0.984	0.976	
Satd. Flow (prot)	1844	0	0	1833	1693	0
Flt Permitted				0.984	0.976	
Satd. Flow (perm)	1844	0	0	1833	1693	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	24	103	217	29	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	312	0	0	320	59	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	265	22	95	200	27	28
Future Volume (Veh/h)	265	22	95	200	27	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	288	24	103	217	29	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			312		723	300
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			312		723	300
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		92	96
cM capacity (veh/h)			1248		361	740

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	312	320	59
Volume Left	0	103	29
Volume Right	24	0	30
cSH	1700	1248	488
Volume to Capacity	0.18	0.08	0.12
Queue Length 95th (ft)	0	7	10
Control Delay (s)	0.0	3.1	13.4
Lane LOS		A	B
Approach Delay (s)	0.0	3.1	13.4
Approach LOS			B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	161	72	22	213	18	22
Future Volume (vph)	161	72	22	213	18	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958				0.926	
Flt Protected				0.995	0.978	
Satd. Flow (prot)	1785	0	0	1853	1687	0
Flt Permitted				0.995	0.978	
Satd. Flow (perm)	1785	0	0	1853	1687	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	178	
Travel Time (s)	1.3			6.1	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	175	78	24	232	20	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	253	0	0	256	44	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	161	72	22	213	18	22
Future Volume (Veh/h)	161	72	22	213	18	22
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	175	78	24	232	20	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			253		494	214
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			253		494	214
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	97
cM capacity (veh/h)			1312		525	826

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	253	256	44
Volume Left	0	24	20
Volume Right	78	0	24
cSH	1700	1312	655
Volume to Capacity	0.15	0.02	0.07
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	0.9	10.9
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	10.9
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	233	11	101	112	25	104
Future Volume (vph)	233	11	101	112	25	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.891	
Flt Protected				0.977	0.990	
Satd. Flow (prot)	1852	0	0	1820	1643	0
Flt Permitted				0.977	0.990	
Satd. Flow (perm)	1852	0	0	1820	1643	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	253	12	110	122	27	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	0	0	232	140	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	233	11	101	112	25	104
Future Volume (Veh/h)	233	11	101	112	25	104
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	253	12	110	122	27	113
Pedestrians				10		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				1		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			265		601	269
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			265		601	269
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		94	85
cM capacity (veh/h)			1299		424	762

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	265	232	140
Volume Left	0	110	27
Volume Right	12	0	113
cSH	1700	1299	661
Volume to Capacity	0.16	0.08	0.21
Queue Length 95th (ft)	0	7	20
Control Delay (s)	0.0	4.2	11.9
Lane LOS		A	B
Approach Delay (s)	0.0	4.2	11.9
Approach LOS			B

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

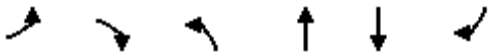
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	119	415	47	170	605
Future Volume (vph)	0	119	415	47	170	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.986			
Flt Protected					0.950	
Satd. Flow (prot)	1719	0	1775	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	1719	0	1775	0	1888	1987
Link Speed (mph)	25		35			35
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.1			2.4
Confl. Peds. (#/hr)	9			28		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	129	451	51	185	658
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	502	0	185	658
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	119	415	47	170	605
Future Volume (Veh/h)	0	119	415	47	170	605
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	129	451	51	185	658
Pedestrians	28		9			
Lane Width (ft)	14.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	3		1			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1542	504			530	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1542	504			530	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	77			82	
cM capacity (veh/h)	99	550			1005	

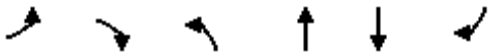
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	129	502	185	658
Volume Left	0	0	185	0
Volume Right	129	51	0	0
cSH	550	1700	1005	1700
Volume to Capacity	0.23	0.30	0.18	0.39
Queue Length 95th (ft)	23	0	17	0
Control Delay (s)	13.5	0.0	9.4	0.0
Lane LOS	B		A	
Approach Delay (s)	13.5	0.0	2.1	
Approach LOS	B			

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	255	249	266	480	68
Future Volume (vph)	24	255	249	266	480	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.877				0.983	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1844	0	1888	1987	2075	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1844	0	1888	1987	2075	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.2	3.2	
Confl. Peds. (#/hr)	5		90			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	277	271	289	522	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	0	271	289	596	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.3%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	255	249	266	480	68
Future Volume (Veh/h)	24	255	249	266	480	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	277	271	289	522	74
Pedestrians	90				5	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	11				1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1485	649	686			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1485	649	686			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	33	66			
cM capacity (veh/h)	80	416	804			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	303	271	289	596
Volume Left	26	271	0	0
Volume Right	277	0	0	74
cSH	306	804	1700	1700
Volume to Capacity	0.99	0.34	0.17	0.35
Queue Length 95th (ft)	262	37	0	0
Control Delay (s)	87.1	11.7	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	87.1	5.7		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	20.3		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	284	24	102	214	29	30
Future Volume (vph)	284	24	102	214	29	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.931	
Flt Protected				0.984	0.976	
Satd. Flow (prot)	1844	0	0	1833	1693	0
Flt Permitted				0.984	0.976	
Satd. Flow (perm)	1844	0	0	1833	1693	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	309	26	111	233	32	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	335	0	0	344	65	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	284	24	102	214	29	30
Future Volume (Veh/h)	284	24	102	214	29	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	309	26	111	233	32	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			335		777	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		777	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1224		332	719

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	335	344	65
Volume Left	0	111	32
Volume Right	26	0	33
cSH	1700	1224	457
Volume to Capacity	0.20	0.09	0.14
Queue Length 95th (ft)	0	7	12
Control Delay (s)	0.0	3.2	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.2	14.2
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	173	77	24	229	19	24
Future Volume (vph)	173	77	24	229	19	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958				0.925	
Flt Protected				0.995	0.978	
Satd. Flow (prot)	1785	0	0	1853	1685	0
Flt Permitted				0.995	0.978	
Satd. Flow (perm)	1785	0	0	1853	1685	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	136	
Travel Time (s)	1.3			6.1	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	84	26	249	21	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	0	0	275	47	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	173	77	24	229	19	24
Future Volume (Veh/h)	173	77	24	229	19	24
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	188	84	26	249	21	26
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			272		531	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			272		531	230
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	97
cM capacity (veh/h)			1291		499	809

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	272	275	47
Volume Left	0	26	21
Volume Right	84	0	26
cSH	1700	1291	633
Volume to Capacity	0.16	0.02	0.07
Queue Length 95th (ft)	0	2	6
Control Delay (s)	0.0	0.9	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.9	11.1
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	250	12	109	120	27	112
Future Volume (vph)	250	12	109	120	27	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.891	
Flt Protected				0.977	0.990	
Satd. Flow (prot)	1852	0	0	1820	1643	0
Flt Permitted				0.977	0.990	
Satd. Flow (perm)	1852	0	0	1820	1643	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	13	118	130	29	122
Shared Lane Traffic (%)						
Lane Group Flow (vph)	285	0	0	248	151	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	250	12	109	120	27	112
Future Volume (Veh/h)	250	12	109	120	27	112
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	13	118	130	29	122
Pedestrians				10		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				1		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			285		644	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			285		644	288
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		93	84
cM capacity (veh/h)			1277		397	743

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	285	248	151
Volume Left	0	118	29
Volume Right	13	0	122
cSH	1700	1277	637
Volume to Capacity	0.17	0.09	0.24
Queue Length 95th (ft)	0	8	23
Control Delay (s)	0.0	4.3	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	4.3	12.4
Approach LOS			B

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	0	119	415	47	170	605	
Future Volume (vph)	0	119	415	47	170	605	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	14	14	11	11	14	14	
Storage Length (ft)	0	0		0	100		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor			1.00				
Frt	0.865		0.986				
Flt Protected					0.950		
Satd. Flow (prot)	1719	0	1767	0	1888	1987	
Flt Permitted					0.436		
Satd. Flow (perm)	1719	0	1767	0	866	1987	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	522		8				
Link Speed (mph)	25		35			35	
Link Distance (ft)	177		209			287	
Travel Time (s)	4.8		4.1			5.6	
Confl. Peds. (#/hr)	9			28			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	129	451	51	185	658	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	129	0	502	0	185	658	
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	9
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5	22.0
Total Split (s)	23.0		55.0		55.0	55.0	22.0
Total Split (%)	23.0%		55.0%		55.0%	55.0%	22%
Maximum Green (s)	18.5		50.5		50.5	50.5	20.0
Yellow Time (s)	3.5		3.5		3.5	3.5	2.0
All-Red Time (s)	1.0		1.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.5		4.5		4.5	4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							13.0
Pedestrian Calls (#/hr)							36
Act Effct Green (s)	5.5		72.3		72.3	72.3	
Actuated g/C Ratio	0.06		0.72		0.72	0.72	
v/c Ratio	0.22		0.39		0.30	0.46	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Control Delay	0.9		8.2		6.4	6.0	
Queue Delay	0.0		0.0		0.2	0.7	
Total Delay	0.9		8.2		6.7	6.7	
LOS	A		A		A	A	
Approach Delay	0.9		8.2			6.7	
Approach LOS	A		A			A	
Queue Length 50th (ft)	0		146		23	83	
Queue Length 95th (ft)	0		216		59	173	
Internal Link Dist (ft)	97		129			207	
Turn Bay Length (ft)					100		
Base Capacity (vph)	743		1279		625	1436	
Starvation Cap Reductn	0		0		114	436	
Spillback Cap Reductn	0		0		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.17		0.39		0.36	0.66	

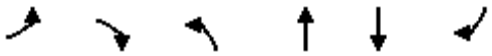
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 6.7		Intersection LOS: A	
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: North Elm St & Woodlawn Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	119	415	47	170	605
Future Volume (vph)	0	119	415	47	170	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	14	11	11	14	14
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.86		0.99		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1719		1769		1888	1987
Flt Permitted	1.00		1.00		0.44	1.00
Satd. Flow (perm)	1719		1769		865	1987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	129	451	51	185	658
RTOR Reduction (vph)	122	0	2	0	0	0
Lane Group Flow (vph)	7	0	500	0	185	658
Confl. Peds. (#/hr)	9			28		
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	5.5		71.5		71.5	71.5
Effective Green, g (s)	5.5		71.5		71.5	71.5
Actuated g/C Ratio	0.06		0.72		0.72	0.72
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	94		1264		618	1420
v/s Ratio Prot	c0.00		0.28			c0.33
v/s Ratio Perm					0.21	
v/c Ratio	0.08		0.40		0.30	0.46
Uniform Delay, d1	44.8		5.7		5.2	6.1
Progression Factor	1.00		1.00		0.74	0.66
Incremental Delay, d2	0.3		0.9		1.0	0.9
Delay (s)	45.2		6.6		4.9	4.9
Level of Service	D		A		A	A
Approach Delay (s)	45.2		6.6			4.9
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

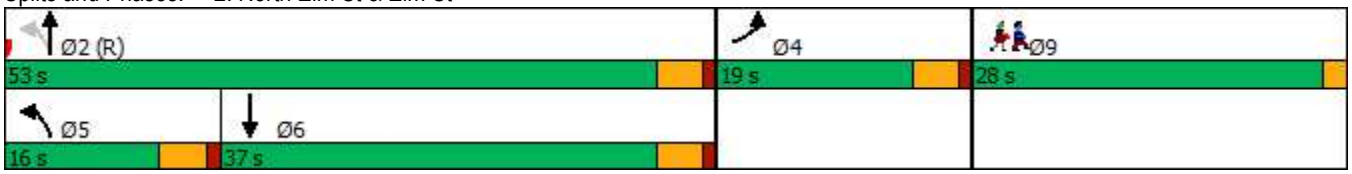


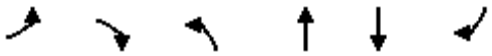
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	24	255	249	266	480	68	
Future Volume (vph)	24	255	249	266	480	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	16	16	14	14	16	16	
Storage Length (ft)	0	0	100			0	
Storage Lanes	1	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	1.00		0.97				
Frt	0.877				0.983		
Flt Protected	0.996		0.950				
Satd. Flow (prot)	1844	0	1888	1987	2075	0	
Flt Permitted	0.996		0.218				
Satd. Flow (perm)	1841	0	422	1987	2075	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	277				8		
Link Speed (mph)	35			35	35		
Link Distance (ft)	139			287	164		
Travel Time (s)	2.7			5.6	3.2		
Confl. Peds. (#/hr)	5		90				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	26	277	271	289	522	74	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	303	0	271	289	596	0	
Turn Type	Prot		pm+pt	NA	NA		
Protected Phases	4		5	2	6		9
Permitted Phases			2				
Detector Phase	4		5	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	20.0		10.0	34.0	24.0		28.0
Total Split (s)	19.0		16.0	53.0	37.0		28.0
Total Split (%)	19.0%		16.0%	53.0%	37.0%		28%
Maximum Green (s)	14.5		11.5	48.5	32.5		26.0
Yellow Time (s)	3.5		3.5	3.5	3.5		2.0
All-Red Time (s)	1.0		1.0	1.0	1.0		0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	4.5		4.5	4.5	4.5		
Lead/Lag			Lead		Lag		
Lead-Lag Optimize?			Yes		Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		None	C-Max	Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							19.0
Pedestrian Calls (#/hr)							36
Act Effct Green (s)	8.6		65.6	65.6	48.1		
Actuated g/C Ratio	0.09		0.66	0.66	0.48		
v/c Ratio	0.74		0.58	0.22	0.60		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø9
Control Delay	18.4		11.4	5.6	27.5		
Queue Delay	0.0		0.2	0.2	0.0		
Total Delay	18.4		11.5	5.8	27.5		
LOS	B		B	A	C		
Approach Delay	18.4			8.6	27.5		
Approach LOS	B			A	C		
Queue Length 50th (ft)	16		29	31	342		
Queue Length 95th (ft)	94		#128	104	#549		
Internal Link Dist (ft)	59			207	84		
Turn Bay Length (ft)			100				
Base Capacity (vph)	504		473	1302	1001		
Starvation Cap Reductn	0		14	449	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	0.60		0.59	0.34	0.60		

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green, Master Intersection			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: North Elm St & Elm St





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	255	249	266	480	68
Future Volume (vph)	24	255	249	266	480	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	14	16	16
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		1.00	1.00	1.00	
Frt	0.88		1.00	1.00	0.98	
Flt Protected	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1843		1879	1987	2076	
Flt Permitted	1.00		0.22	1.00	1.00	
Satd. Flow (perm)	1843		431	1987	2076	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	277	271	289	522	74
RTOR Reduction (vph)	253	0	0	0	4	0
Lane Group Flow (vph)	50	0	271	289	592	0
Confl. Peds. (#/hr)	5		90			
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.6		64.8	64.8	47.3	
Effective Green, g (s)	8.6		64.8	64.8	47.3	
Actuated g/C Ratio	0.09		0.65	0.65	0.47	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	158		467	1287	981	
v/s Ratio Prot	c0.03		c0.08	0.15	0.29	
v/s Ratio Perm			c0.30			
v/c Ratio	0.32		0.58	0.22	0.60	
Uniform Delay, d1	42.9		12.2	7.3	19.4	
Progression Factor	1.00		0.50	0.49	1.00	
Incremental Delay, d2	1.2		1.8	0.4	2.7	
Delay (s)	44.1		7.8	3.9	22.2	
Level of Service	D		A	A	C	
Approach Delay (s)	44.1			5.8	22.2	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	284	24	102	214	29	30
Future Volume (vph)	284	24	102	214	29	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.931	
Flt Protected				0.984	0.976	
Satd. Flow (prot)	1844	0	0	1833	1693	0
Flt Permitted				0.984	0.976	
Satd. Flow (perm)	1844	0	0	1833	1693	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	309	26	111	233	32	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	335	0	0	344	65	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	284	24	102	214	29	30
Future Volume (Veh/h)	284	24	102	214	29	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	309	26	111	233	32	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				355		
pX, platoon unblocked						
vC, conflicting volume			335		777	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		777	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1224		332	719

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	335	344	65
Volume Left	0	111	32
Volume Right	26	0	33
cSH	1700	1224	457
Volume to Capacity	0.20	0.09	0.14
Queue Length 95th (ft)	0	7	12
Control Delay (s)	0.0	3.2	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.2	14.2
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	173	77	24	228	0	0
Future Volume (vph)	173	77	24	228	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958					
Flt Protected				0.995		
Satd. Flow (prot)	1785	0	0	1853	0	0
Flt Permitted				0.995		
Satd. Flow (perm)	1785	0	0	1853	0	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	53			320	135	
Travel Time (s)	1.2			6.2	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	84	26	248	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	0	0	274	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	173	77	24	228	0	0
Future Volume (Veh/h)	173	77	24	228	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	188	84	26	248	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				818		
pX, platoon unblocked						
vC, conflicting volume			272		530	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			272		530	230
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1291		499	809

Direction, Lane #	EB 1	WB 1
Volume Total	272	274
Volume Left	0	26
Volume Right	84	0
cSH	1700	1291
Volume to Capacity	0.16	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.9
Lane LOS		A
Approach Delay (s)	0.0	0.9
Approach LOS		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	250	12	109	120	45	136
Future Volume (vph)	250	12	109	120	45	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.899	
Flt Protected				0.977	0.988	
Satd. Flow (prot)	1852	0	0	1820	1655	0
Flt Permitted				0.977	0.988	
Satd. Flow (perm)	1852	0	0	1820	1655	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			53	165	
Travel Time (s)	3.0			1.0	3.8	
Confl. Peds. (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	13	118	130	49	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	285	0	0	248	197	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

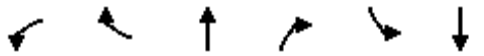
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	250	12	109	120	45	136
Future Volume (Veh/h)	250	12	109	120	45	136
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	13	118	130	49	148
Pedestrians				10		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				1		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				871		
pX, platoon unblocked						
vC, conflicting volume			285		644	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			285		644	288
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		88	80
cM capacity (veh/h)			1277		397	743

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	285	248	197
Volume Left	0	118	49
Volume Right	13	0	148
cSH	1700	1277	611
Volume to Capacity	0.17	0.09	0.32
Queue Length 95th (ft)	0	8	35
Control Delay (s)	0.0	4.3	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	4.3	13.7
Approach LOS			B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	522	47	170	605
Future Volume (vph)	0	0	522	47	170	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.989			
Flt Protected					0.950	
Satd. Flow (prot)	0	0	1781	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1781	0	1888	1987
Link Speed (mph)	25		35			35
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.1			2.4
Confl. Peds. (#/hr)	9			28		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	567	51	185	658
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	618	0	185	658
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		14			14
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.92	0.92	1.04	1.04	0.92	0.92
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

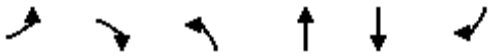
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	522	47	170	605
Future Volume (Veh/h)	0	0	522	47	170	605
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	567	51	185	658
Pedestrians	28		9			
Lane Width (ft)	0.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		1			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1658	620			646	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1658	620			646	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			80	
cM capacity (veh/h)	86	488			939	

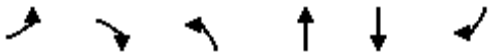
Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	618	185	658
Volume Left	0	185	0
Volume Right	51	0	0
cSH	1700	939	1700
Volume to Capacity	0.36	0.20	0.39
Queue Length 95th (ft)	0	18	0
Control Delay (s)	0.0	9.8	0.0
Lane LOS		A	
Approach Delay (s)	0.0	2.1	
Approach LOS			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	24	255	237	266	480	80
Future Volume (vph)	24	255	237	266	480	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.877				0.981	
Flt Protected	0.996		0.950			
Satd. Flow (prot)	1844	0	1888	1987	2071	0
Flt Permitted	0.996		0.950			
Satd. Flow (perm)	1844	0	1888	1987	2071	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.2	3.2	
Confl. Peds. (#/hr)	5		90			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	277	258	289	522	87
Shared Lane Traffic (%)						
Lane Group Flow (vph)	303	0	258	289	609	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	16			14	14	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.85	0.85	0.92	0.92	0.85	0.85
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	255	237	266	480	80
Future Volume (Veh/h)	24	255	237	266	480	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	277	258	289	522	87
Pedestrians	90				5	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	11				1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1466	656	699			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1466	656	699			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	33	68			
cM capacity (veh/h)	84	413	795			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	303	258	289	609
Volume Left	26	258	0	0
Volume Right	277	0	0	87
cSH	309	795	1700	1700
Volume to Capacity	0.98	0.32	0.17	0.36
Queue Length 95th (ft)	258	35	0	0
Control Delay (s)	84.4	11.7	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	84.4	5.5		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	19.6		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	284	24	102	214	29	30
Future Volume (vph)	284	24	102	214	29	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.931	
Flt Protected				0.984	0.976	
Satd. Flow (prot)	1844	0	0	1833	1693	0
Flt Permitted				0.984	0.976	
Satd. Flow (perm)	1844	0	0	1833	1693	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	309	26	111	233	32	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	335	0	0	344	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	284	24	102	214	29	30
Future Volume (Veh/h)	284	24	102	214	29	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	309	26	111	233	32	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			335		777	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		777	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1224		332	719

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	335	344	65
Volume Left	0	111	32
Volume Right	26	0	33
cSH	1700	1224	457
Volume to Capacity	0.20	0.09	0.14
Queue Length 95th (ft)	0	7	12
Control Delay (s)	0.0	3.2	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.2	14.2
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	173	77	24	228	0	0
Future Volume (vph)	173	77	24	228	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958					
Flt Protected				0.995		
Satd. Flow (prot)	1785	0	0	1853	0	0
Flt Permitted				0.995		
Satd. Flow (perm)	1785	0	0	1853	0	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	137	
Travel Time (s)	1.3			6.1	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	84	26	248	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	0	0	274	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	173	77	24	228	0	0
Future Volume (Veh/h)	173	77	24	228	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	188	84	26	248	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			272		530	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			272		530	230
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1291		499	809

Direction, Lane #	EB 1	WB 1
Volume Total	272	274
Volume Left	0	26
Volume Right	84	0
cSH	1700	1291
Volume to Capacity	0.16	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.9
Lane LOS		A
Approach Delay (s)	0.0	0.9
Approach LOS		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	250	12	109	120	45	136
Future Volume (vph)	250	12	109	120	45	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.899	
Flt Protected				0.977	0.988	
Satd. Flow (prot)	1852	0	0	1820	1655	0
Flt Permitted				0.977	0.988	
Satd. Flow (perm)	1852	0	0	1820	1655	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	13	118	130	49	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	285	0	0	248	197	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	250	12	109	120	45	136
Future Volume (Veh/h)	250	12	109	120	45	136
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	13	118	130	49	148
Pedestrians				10		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				1		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			285		644	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			285		644	288
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		88	80
cM capacity (veh/h)			1277		397	743

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	285	248	197
Volume Left	0	118	49
Volume Right	13	0	148
cSH	1700	1277	611
Volume to Capacity	0.17	0.09	0.32
Queue Length 95th (ft)	0	8	35
Control Delay (s)	0.0	4.3	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	4.3	13.7
Approach LOS			B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

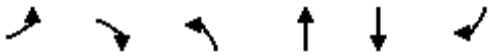
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	119	415	47	194	605
Future Volume (vph)	0	119	415	47	194	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.986			
Flt Protected					0.950	
Satd. Flow (prot)	1719	0	1775	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	1719	0	1775	0	1888	1987
Link Speed (mph)	25		35			35
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.1			2.4
Confl. Peds. (#/hr)	9			28		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	129	451	51	211	658
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	502	0	211	658
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	119	415	47	194	605
Future Volume (Veh/h)	0	119	415	47	194	605
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	129	451	51	211	658
Pedestrians	28		9			
Lane Width (ft)	14.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	3		1			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1594	504			530	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1594	504			530	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	77			79	
cM capacity (veh/h)	89	550			1005	

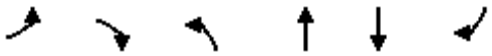
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	129	502	211	658
Volume Left	0	0	211	0
Volume Right	129	51	0	0
cSH	550	1700	1005	1700
Volume to Capacity	0.23	0.30	0.21	0.39
Queue Length 95th (ft)	23	0	20	0
Control Delay (s)	13.5	0.0	9.5	0.0
Lane LOS	B		A	
Approach Delay (s)	13.5	0.0	2.3	
Approach LOS	B			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	279	249	266	480	68
Future Volume (vph)	0	279	249	266	480	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.983	
Flt Protected			0.950			
Satd. Flow (prot)	0	1826	1888	1987	2075	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1826	1888	1987	2075	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.2	3.2	
Confl. Peds. (#/hr)	5		90			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	303	271	289	522	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	303	271	289	596	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	279	249	266	480	68
Future Volume (Veh/h)	0	279	249	266	480	68
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	303	271	289	522	74
Pedestrians	90				5	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	11				1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1485	649	686			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1485	649	686			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	27	66			
cM capacity (veh/h)	80	416	804			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	303	271	289	596
Volume Left	0	271	0	0
Volume Right	303	0	0	74
cSH	416	804	1700	1700
Volume to Capacity	0.73	0.34	0.17	0.35
Queue Length 95th (ft)	143	37	0	0
Control Delay (s)	33.6	11.7	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	33.6	5.7		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	284	24	102	214	29	30
Future Volume (vph)	284	24	102	214	29	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.931	
Flt Protected				0.984	0.976	
Satd. Flow (prot)	1844	0	0	1833	1693	0
Flt Permitted				0.984	0.976	
Satd. Flow (perm)	1844	0	0	1833	1693	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	309	26	111	233	32	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	335	0	0	344	65	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	284	24	102	214	29	30
Future Volume (Veh/h)	284	24	102	214	29	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	309	26	111	233	32	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			335		777	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		777	322
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		90	95
cM capacity (veh/h)			1224		332	719

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	335	344	65
Volume Left	0	111	32
Volume Right	26	0	33
cSH	1700	1224	457
Volume to Capacity	0.20	0.09	0.14
Queue Length 95th (ft)	0	7	12
Control Delay (s)	0.0	3.2	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	3.2	14.2
Approach LOS			B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	173	77	24	228	0	0
Future Volume (vph)	173	77	24	228	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958					
Flt Protected				0.995		
Satd. Flow (prot)	1785	0	0	1853	0	0
Flt Permitted				0.995		
Satd. Flow (perm)	1785	0	0	1853	0	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	153	
Travel Time (s)	1.3			6.1	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	188	84	26	248	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	0	0	274	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	173	77	24	228	0	0
Future Volume (Veh/h)	173	77	24	228	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	188	84	26	248	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			272		530	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			272		530	230
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	100
cM capacity (veh/h)			1291		499	809

Direction, Lane #	EB 1	WB 1
Volume Total	272	274
Volume Left	0	26
Volume Right	84	0
cSH	1700	1291
Volume to Capacity	0.16	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.9
Lane LOS		A
Approach Delay (s)	0.0	0.9
Approach LOS		

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	33.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	250	12	109	120	45	130
Future Volume (vph)	250	12	109	120	45	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.994				0.900	
Flt Protected				0.977	0.987	
Satd. Flow (prot)	1852	0	0	1820	1655	0
Flt Permitted				0.977	0.987	
Satd. Flow (perm)	1852	0	0	1820	1655	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	13	118	130	49	141
Shared Lane Traffic (%)						
Lane Group Flow (vph)	285	0	0	248	190	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	250	12	109	120	45	130
Future Volume (Veh/h)	250	12	109	120	45	130
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	272	13	118	130	49	141
Pedestrians				10		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				1		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			285		644	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			285		644	288
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		88	81
cM capacity (veh/h)			1277		397	743

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	285	248	190
Volume Left	0	118	49
Volume Right	13	0	141
cSH	1700	1277	607
Volume to Capacity	0.17	0.09	0.31
Queue Length 95th (ft)	0	8	33
Control Delay (s)	0.0	4.3	13.6
Lane LOS		A	B
Approach Delay (s)	0.0	4.3	13.6
Approach LOS			B

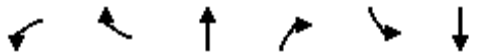
Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E

Intersection Capacity Analysis Worksheets - Afternoon Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	156	447	70	122	539
Future Volume (vph)	1	156	447	70	122	539
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.866		0.982			
Flt Protected					0.950	
Satd. Flow (prot)	1721	0	1768	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	1721	0	1768	0	1888	1987
Link Speed (mph)	25		30			30
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.8			2.8
Confl. Peds. (#/hr)	27			44		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	170	486	76	133	586
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	0	562	0	133	586
Sign Control	Stop		Free			Free

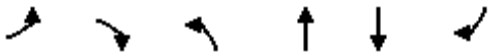
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.7%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	156	447	70	122	539
Future Volume (Veh/h)	1	156	447	70	122	539
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	170	486	76	133	586
Pedestrians	44		27			
Lane Width (ft)	14.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	5		2			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1447	568			606	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1447	568			606	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	66			86	
cM capacity (veh/h)	115	497			925	

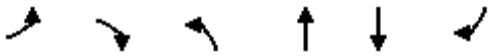
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	171	562	133	586
Volume Left	1	0	133	0
Volume Right	170	76	0	0
cSH	487	1700	925	1700
Volume to Capacity	0.35	0.33	0.14	0.34
Queue Length 95th (ft)	39	0	13	0
Control Delay (s)	16.3	0.0	9.5	0.0
Lane LOS	C		A	
Approach Delay (s)	16.3	0.0	1.8	
Approach LOS	C			

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	27	241	290	333	419	51
Future Volume (vph)	27	241	290	333	419	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.878				0.985	
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1844	0	1888	1987	2079	0
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1844	0	1888	1987	2079	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.7	3.7	
Confl. Peds. (#/hr)	20		101			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	262	315	362	455	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	291	0	315	362	510	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.6%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	241	290	333	419	51
Future Volume (Veh/h)	27	241	290	333	419	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	262	315	362	455	55
Pedestrians	101				20	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	13				3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1596	584	611			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1596	584	611			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	54	41	63			
cM capacity (veh/h)	63	446	844			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	291	315	362	510
Volume Left	29	315	0	0
Volume Right	262	0	0	55
cSH	277	844	1700	1700
Volume to Capacity	1.05	0.37	0.21	0.30
Queue Length 95th (ft)	284	44	0	0
Control Delay (s)	108.7	11.8	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	108.7	5.5		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	23.9		
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	225	3	26	315	37	18
Future Volume (vph)	225	3	26	315	37	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.955	
Flt Protected				0.996	0.968	
Satd. Flow (prot)	1859	0	0	1855	1722	0
Flt Permitted				0.996	0.968	
Satd. Flow (perm)	1859	0	0	1855	1722	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	245	3	28	342	40	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	248	0	0	370	60	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	225	3	26	315	37	18
Future Volume (Veh/h)	225	3	26	315	37	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	245	3	28	342	40	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			248		644	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			248		644	246
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		91	97
cM capacity (veh/h)			1318		428	792

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	248	370	60
Volume Left	0	28	40
Volume Right	3	0	20
cSH	1700	1318	505
Volume to Capacity	0.15	0.02	0.12
Queue Length 95th (ft)	0	2	10
Control Delay (s)	0.0	0.8	13.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	13.1
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	115	24	61	285	43	23
Future Volume (vph)	115	24	61	285	43	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.953	
Flt Protected				0.991	0.968	
Satd. Flow (prot)	1820	0	0	1846	1718	0
Flt Permitted				0.991	0.968	
Satd. Flow (perm)	1820	0	0	1846	1718	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	52			320	146	
Travel Time (s)	1.2			6.2	3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	125	26	66	310	47	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	151	0	0	376	72	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	115	24	61	285	43	23
Future Volume (Veh/h)	115	24	61	285	43	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	125	26	66	310	47	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			151		580	138
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		580	138
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		90	97
cM capacity (veh/h)			1430		455	910

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	151	376	72
Volume Left	0	66	47
Volume Right	26	0	25
cSH	1700	1430	550
Volume to Capacity	0.09	0.05	0.13
Queue Length 95th (ft)	0	4	11
Control Delay (s)	0.0	1.7	12.5
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	12.5
Approach LOS			B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	139	21	149	136	17	91
Future Volume (vph)	139	21	149	136	17	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982				0.886	
Flt Protected				0.975	0.992	
Satd. Flow (prot)	1829	0	0	1816	1637	0
Flt Permitted				0.975	0.992	
Satd. Flow (perm)	1829	0	0	1816	1637	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			52	165	
Travel Time (s)	3.0			1.0	3.8	
Confl. Peds. (#/hr)						25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	151	23	162	148	18	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	0	0	310	117	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	139	21	149	136	17	91
Future Volume (Veh/h)	139	21	149	136	17	91
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	151	23	162	148	18	99
Pedestrians				25		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			174		634	188
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			174		634	188
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		95	88
cM capacity (veh/h)			1403		392	834

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	174	310	117
Volume Left	0	162	18
Volume Right	23	0	99
cSH	1700	1403	711
Volume to Capacity	0.10	0.12	0.16
Queue Length 95th (ft)	0	10	15
Control Delay (s)	0.0	4.6	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	4.6	11.1
Approach LOS			B

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

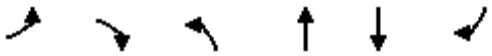
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	167	479	75	131	578
Future Volume (vph)	1	167	479	75	131	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.866		0.982			
Flt Protected					0.950	
Satd. Flow (prot)	1721	0	1768	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	1721	0	1768	0	1888	1987
Link Speed (mph)	25		30			30
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.8			2.8
Confl. Peds. (#/hr)	27			44		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	182	521	82	142	628
Shared Lane Traffic (%)						
Lane Group Flow (vph)	183	0	603	0	142	628
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.9%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	167	479	75	131	578
Future Volume (Veh/h)	1	167	479	75	131	578
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	182	521	82	142	628
Pedestrians	44		27			
Lane Width (ft)	14.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	5		2			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1545	606			647	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1545	606			647	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	61			84	
cM capacity (veh/h)	98	473			893	

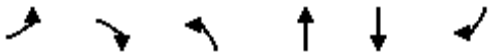
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	183	603	142	628
Volume Left	1	0	142	0
Volume Right	182	82	0	0
cSH	463	1700	893	1700
Volume to Capacity	0.40	0.35	0.16	0.37
Queue Length 95th (ft)	47	0	14	0
Control Delay (s)	17.8	0.0	9.8	0.0
Lane LOS	C		A	
Approach Delay (s)	17.8	0.0	1.8	
Approach LOS	C			

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	258	311	357	449	55
Future Volume (vph)	29	258	311	357	449	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.879				0.985	
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1846	0	1888	1987	2079	0
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1846	0	1888	1987	2079	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.7	3.7	
Confl. Peds. (#/hr)	20		101			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	280	338	388	488	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	312	0	338	388	548	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	258	311	357	449	55
Future Volume (Veh/h)	29	258	311	357	449	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	280	338	388	488	60
Pedestrians	101				20	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	13				3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1703	619	649			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1703	619	649			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	36	34	59			
cM capacity (veh/h)	50	426	817			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	312	338	388	548
Volume Left	32	338	0	0
Volume Right	280	0	0	60
cSH	241	817	1700	1700
Volume to Capacity	1.29	0.41	0.23	0.32
Queue Length 95th (ft)	403	51	0	0
Control Delay (s)	200.8	12.5	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	200.8	5.8		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	42.2		
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	3	28	338	40	19
Future Volume (vph)	241	3	28	338	40	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.956	
Flt Protected				0.996	0.967	
Satd. Flow (prot)	1859	0	0	1855	1722	0
Flt Permitted				0.996	0.967	
Satd. Flow (perm)	1859	0	0	1855	1722	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	3	30	367	43	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	0	0	397	64	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	241	3	28	338	40	19
Future Volume (Veh/h)	241	3	28	338	40	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	262	3	30	367	43	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			265		690	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			265		690	264
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		89	97
cM capacity (veh/h)			1299		401	775

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	265	397	64
Volume Left	0	30	43
Volume Right	3	0	21
cSH	1700	1299	477
Volume to Capacity	0.16	0.02	0.13
Queue Length 95th (ft)	0	2	12
Control Delay (s)	0.0	0.8	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	13.7
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	123	26	65	306	45	25
Future Volume (vph)	123	26	65	306	45	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.952	
Flt Protected				0.991	0.969	
Satd. Flow (prot)	1820	0	0	1846	1718	0
Flt Permitted				0.991	0.969	
Satd. Flow (perm)	1820	0	0	1846	1718	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	144	
Travel Time (s)	1.3			6.1	3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	28	71	333	49	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	404	76	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	123	26	65	306	45	25
Future Volume (Veh/h)	123	26	65	306	45	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	28	71	333	49	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			162		623	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		623	148
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		89	97
cM capacity (veh/h)			1417		427	899

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	162	404	76
Volume Left	0	71	49
Volume Right	28	0	27
cSH	1700	1417	525
Volume to Capacity	0.10	0.05	0.14
Queue Length 95th (ft)	0	4	13
Control Delay (s)	0.0	1.7	13.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.7	13.0
Approach LOS			B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	149	23	161	146	18	97
Future Volume (vph)	149	23	161	146	18	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982				0.887	
Flt Protected				0.974	0.992	
Satd. Flow (prot)	1829	0	0	1814	1639	0
Flt Permitted				0.974	0.992	
Satd. Flow (perm)	1829	0	0	1814	1639	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	25	175	159	20	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	0	334	125	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	149	23	161	146	18	97
Future Volume (Veh/h)	149	23	161	146	18	97
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	25	175	159	20	105
Pedestrians				25		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		684	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		684	200
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		94	87
cM capacity (veh/h)			1387		362	821

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	187	334	125
Volume Left	0	175	20
Volume Right	25	0	105
cSH	1700	1387	683
Volume to Capacity	0.11	0.13	0.18
Queue Length 95th (ft)	0	11	17
Control Delay (s)	0.0	4.7	11.4
Lane LOS		A	B
Approach Delay (s)	0.0	4.7	11.4
Approach LOS			B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Lane Configurations							
Traffic Volume (vph)	1	167	479	75	131	578	
Future Volume (vph)	1	167	479	75	131	578	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	14	14	11	11	14	14	
Storage Length (ft)	0	0		0	100		
Storage Lanes	1	0		0	1		
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	1.00		0.99				
Frt	0.866		0.982				
Flt Protected					0.950		
Satd. Flow (prot)	1721	0	1754	0	1888	1987	
Flt Permitted					0.374		
Satd. Flow (perm)	1720	0	1754	0	743	1987	
Right Turn on Red		Yes		Yes			
Satd. Flow (RTOR)	182		11				
Link Speed (mph)	25		30			30	
Link Distance (ft)	177		209			287	
Travel Time (s)	4.8		4.8			6.5	
Confl. Peds. (#/hr)	27			44			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1	182	521	82	142	628	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	183	0	603	0	142	628	
Turn Type	Prot		NA		Perm	NA	
Protected Phases	8		2			6	9
Permitted Phases					6		
Detector Phase	8		2		6	6	
Switch Phase							
Minimum Initial (s)	5.0		5.0		5.0	5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5	22.0
Total Split (s)	25.0		63.0		63.0	63.0	22.0
Total Split (%)	22.7%		57.3%		57.3%	57.3%	20%
Maximum Green (s)	20.5		59.5		58.5	58.5	20.0
Yellow Time (s)	3.5		3.5		3.5	3.5	2.0
All-Red Time (s)	1.0		0.0		1.0	1.0	0.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.5		3.5		4.5	4.5	
Lead/Lag							
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max	None
Walk Time (s)							7.0
Flash Dont Walk (s)							13.0
Pedestrian Calls (#/hr)							36
Act Effct Green (s)	7.5		81.3		80.3	80.3	
Actuated g/C Ratio	0.07		0.74		0.73	0.73	
v/c Ratio	0.64		0.46		0.26	0.43	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT	Ø9
Control Delay	17.9		9.4		5.9	5.3	
Queue Delay	0.0		0.0		0.0	0.5	
Total Delay	17.9		9.4		5.9	5.9	
LOS	B		A		A	A	
Approach Delay	17.9		9.4			5.9	
Approach LOS	B		A			A	
Queue Length 50th (ft)	1		184		16	75	
Queue Length 95th (ft)	65		327		m45	157	
Internal Link Dist (ft)	97		129			207	
Turn Bay Length (ft)					100		
Base Capacity (vph)	468		1300		542	1451	
Starvation Cap Reductn	0		0		0	421	
Spillback Cap Reductn	0		4		0	0	
Storage Cap Reductn	0		0		0	0	
Reduced v/c Ratio	0.39		0.47		0.26	0.61	

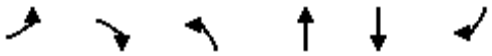
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green, Master Intersection			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 8.6		Intersection LOS: A	
Intersection Capacity Utilization 58.7%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 1: North Elm St & Woodlawn Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	167	479	75	131	578
Future Volume (vph)	1	167	479	75	131	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	14	14	11	11	14	14
Total Lost time (s)	4.5		3.5		4.5	4.5
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	1.00		0.99		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.87		0.98		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1720		1756		1888	1987
Flt Permitted	1.00		1.00		0.37	1.00
Satd. Flow (perm)	1720		1756		743	1987
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	182	521	82	142	628
RTOR Reduction (vph)	170	0	3	0	0	0
Lane Group Flow (vph)	13	0	600	0	142	628
Confl. Peds. (#/hr)	27			44		
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	7.5		80.5		79.5	79.5
Effective Green, g (s)	7.5		80.5		79.5	79.5
Actuated g/C Ratio	0.07		0.73		0.72	0.72
Clearance Time (s)	4.5		3.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	117		1285		536	1436
v/s Ratio Prot	c0.01		c0.34			0.32
v/s Ratio Perm					0.19	
v/c Ratio	0.11		0.47		0.26	0.44
Uniform Delay, d1	48.1		6.0		5.2	6.2
Progression Factor	1.00		1.00		0.62	0.54
Incremental Delay, d2	0.4		1.2		1.0	0.8
Delay (s)	48.6		7.2		4.2	4.2
Level of Service	D		A		A	A
Approach Delay (s)	48.6		7.2			4.2
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

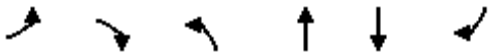


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	29	258	311	357	449	55	
Future Volume (vph)	29	258	311	357	449	55	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	16	16	14	14	16	16	
Storage Length (ft)	0	0	100			0	
Storage Lanes	1	0	1			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor	0.99		0.97				
Frt	0.879				0.985		
Flt Protected	0.995		0.950				
Satd. Flow (prot)	1846	0	1888	1987	2079	0	
Flt Permitted	0.995		0.258				
Satd. Flow (perm)	1832	0	496	1987	2079	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)	280				6		
Link Speed (mph)	35			30	30		
Link Distance (ft)	139			287	164		
Travel Time (s)	2.7			6.5	3.7		
Confl. Peds. (#/hr)	20		101				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	32	280	338	388	488	60	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	312	0	338	388	548	0	
Turn Type	Prot		pm+pt	NA	NA		
Protected Phases	4		5	2	6		9
Permitted Phases			2				
Detector Phase	4		5	2	6		
Switch Phase							
Minimum Initial (s)	5.0		5.0	5.0	5.0		5.0
Minimum Split (s)	19.0		16.0	53.0	37.0		28.0
Total Split (s)	19.0		23.0	63.0	40.0		28.0
Total Split (%)	17.3%		20.9%	57.3%	36.4%		25%
Maximum Green (s)	14.5		18.5	58.5	35.5		26.0
Yellow Time (s)	3.5		3.5	3.5	3.5		2.0
All-Red Time (s)	1.0		1.0	1.0	1.0		0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		
Total Lost Time (s)	4.5		4.5	4.5	4.5		
Lead/Lag			Lead		Lag		
Lead-Lag Optimize?			Yes		Yes		
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0
Recall Mode	None		None	C-Max	C-Max		None
Walk Time (s)							7.0
Flash Dont Walk (s)							19.0
Pedestrian Calls (#/hr)							36
Act Effct Green (s)	8.9		75.3	75.3	53.5		
Actuated g/C Ratio	0.08		0.68	0.68	0.49		
v/c Ratio	0.77		0.61	0.29	0.54		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø9
Control Delay	21.4		13.7	6.8	28.0		
Queue Delay	0.0		0.5	0.3	0.0		
Total Delay	21.4		14.2	7.1	28.0		
LOS	C		B	A	C		
Approach Delay	21.4			10.4	28.0		
Approach LOS	C			B	C		
Queue Length 50th (ft)	22		50	58	331		
Queue Length 95th (ft)	107		131	105	#518		
Internal Link Dist (ft)	59			207	84		
Turn Bay Length (ft)			100				
Base Capacity (vph)	486		589	1360	1015		
Starvation Cap Reductn	0		52	466	0		
Spillback Cap Reductn	0		0	0	0		
Storage Cap Reductn	0		0	0	0		
Reduced v/c Ratio	0.64		0.63	0.43	0.54		

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 18 (16%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 18.6		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: North Elm St & Elm St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	258	311	357	449	55
Future Volume (vph)	29	258	311	357	449	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	16	16	14	14	16	16
Total Lost time (s)	4.5		4.5	4.5	4.5	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frpb, ped/bikes	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00		0.99	1.00	1.00	
Frt	0.88		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1846		1876	1987	2080	
Flt Permitted	0.99		0.26	1.00	1.00	
Satd. Flow (perm)	1846		509	1987	2080	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	280	338	388	488	60
RTOR Reduction (vph)	257	0	0	0	3	0
Lane Group Flow (vph)	55	0	338	388	545	0
Confl. Peds. (#/hr)	20		101			
Turn Type	Prot		pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.9		74.5	74.5	52.7	
Effective Green, g (s)	8.9		74.5	74.5	52.7	
Actuated g/C Ratio	0.08		0.68	0.68	0.48	
Clearance Time (s)	4.5		4.5	4.5	4.5	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	149		559	1345	996	
v/s Ratio Prot	c0.03		c0.09	0.20	0.26	
v/s Ratio Perm			c0.31			
v/c Ratio	0.37		0.60	0.29	0.55	
Uniform Delay, d1	47.9		11.5	7.1	20.2	
Progression Factor	1.00		0.91	0.62	1.00	
Incremental Delay, d2	1.5		1.7	0.5	2.2	
Delay (s)	49.4		12.3	4.9	22.4	
Level of Service	D		B	A	C	
Approach Delay (s)	49.4			8.3	22.4	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	3	28	338	40	19
Future Volume (vph)	241	3	28	338	40	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.956	
Flt Protected				0.996	0.967	
Satd. Flow (prot)	1859	0	0	1855	1722	0
Flt Permitted				0.996	0.967	
Satd. Flow (perm)	1859	0	0	1855	1722	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	3	30	367	43	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	0	0	397	64	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	241	3	28	338	40	19
Future Volume (Veh/h)	241	3	28	338	40	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	262	3	30	367	43	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				355		
pX, platoon unblocked						
vC, conflicting volume			265		690	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			265		690	264
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		89	97
cM capacity (veh/h)			1299		401	775

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	265	397	64
Volume Left	0	30	43
Volume Right	3	0	21
cSH	1700	1299	477
Volume to Capacity	0.16	0.02	0.13
Queue Length 95th (ft)	0	2	12
Control Delay (s)	0.0	0.8	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	13.7
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	123	26	65	306	0	0
Future Volume (vph)	123	26	65	306	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977					
Flt Protected				0.991		
Satd. Flow (prot)	1820	0	0	1846	0	0
Flt Permitted				0.991		
Satd. Flow (perm)	1820	0	0	1846	0	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	134	
Travel Time (s)	1.3			6.1	3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	28	71	333	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	404	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	123	26	65	306	0	0
Future Volume (Veh/h)	123	26	65	306	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	28	71	333	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				813		
pX, platoon unblocked						
vC, conflicting volume			162		623	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		623	148
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	100
cM capacity (veh/h)			1417		427	899

Direction, Lane #	EB 1	WB 1
Volume Total	162	404
Volume Left	0	71
Volume Right	28	0
cSH	1700	1417
Volume to Capacity	0.10	0.05
Queue Length 95th (ft)	0	4
Control Delay (s)	0.0	1.7
Lane LOS		A
Approach Delay (s)	0.0	1.7
Approach LOS		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	149	23	161	146	63	121
Future Volume (vph)	149	23	161	146	63	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982				0.911	
Flt Protected				0.974	0.983	
Satd. Flow (prot)	1829	0	0	1814	1668	0
Flt Permitted				0.974	0.983	
Satd. Flow (perm)	1829	0	0	1814	1668	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	25	175	159	68	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	0	334	200	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			

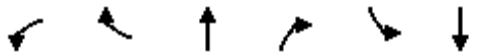
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	149	23	161	146	63	121
Future Volume (Veh/h)	149	23	161	146	63	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	25	175	159	68	132
Pedestrians				25		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				870		
pX, platoon unblocked						
vC, conflicting volume			187		684	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		684	200
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		81	84
cM capacity (veh/h)			1387		362	821

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	187	334	200
Volume Left	0	175	68
Volume Right	25	0	132
cSH	1700	1387	574
Volume to Capacity	0.11	0.13	0.35
Queue Length 95th (ft)	0	11	39
Control Delay (s)	0.0	4.7	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	4.7	14.6
Approach LOS			B

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	629	75	131	579
Future Volume (vph)	0	0	629	75	131	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.986			
Flt Protected					0.950	
Satd. Flow (prot)	0	0	1775	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	1775	0	1888	1987
Link Speed (mph)	25		30			30
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.8			2.8
Confl. Peds. (#/hr)	27			44		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	684	82	142	629
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	766	0	142	629
Sign Control	Stop		Free			Free

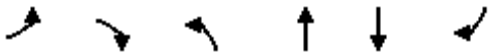
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	629	75	131	579
Future Volume (Veh/h)	0	0	629	75	131	579
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	684	82	142	629
Pedestrians	44		27			
Lane Width (ft)	0.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	0		2			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1709	769			810	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1709	769			810	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			83	
cM capacity (veh/h)	81	401			816	

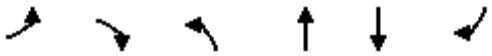
Direction, Lane #	NB 1	SB 1	SB 2
Volume Total	766	142	629
Volume Left	0	142	0
Volume Right	82	0	0
cSH	1700	816	1700
Volume to Capacity	0.45	0.17	0.37
Queue Length 95th (ft)	0	16	0
Control Delay (s)	0.0	10.3	0.0
Lane LOS		B	
Approach Delay (s)	0.0	1.9	
Approach LOS			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	258	294	357	449	72
Future Volume (vph)	29	258	294	357	449	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.879				0.981	
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1846	0	1888	1987	2071	0
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1846	0	1888	1987	2071	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.7	3.7	
Confl. Peds. (#/hr)	20		101			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	280	320	388	488	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	312	0	320	388	566	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	258	294	357	449	72
Future Volume (Veh/h)	29	258	294	357	449	72
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	280	320	388	488	78
Pedestrians	101				20	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	13				3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1676	628	667			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1676	628	667			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	40	33	60			
cM capacity (veh/h)	54	421	804			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	312	320	388	566
Volume Left	32	320	0	0
Volume Right	280	0	0	78
cSH	247	804	1700	1700
Volume to Capacity	1.26	0.40	0.23	0.33
Queue Length 95th (ft)	390	48	0	0
Control Delay (s)	187.0	12.4	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	187.0	5.6		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	39.3		
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	3	28	338	40	19
Future Volume (vph)	241	3	28	338	40	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.956	
Flt Protected				0.996	0.967	
Satd. Flow (prot)	1859	0	0	1855	1722	0
Flt Permitted				0.996	0.967	
Satd. Flow (perm)	1859	0	0	1855	1722	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	3	30	367	43	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	0	0	397	64	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	241	3	28	338	40	19
Future Volume (Veh/h)	241	3	28	338	40	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	262	3	30	367	43	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			265		690	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			265		690	264
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		89	97
cM capacity (veh/h)			1299		401	775

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	265	397	64
Volume Left	0	30	43
Volume Right	3	0	21
cSH	1700	1299	477
Volume to Capacity	0.16	0.02	0.13
Queue Length 95th (ft)	0	2	12
Control Delay (s)	0.0	0.8	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	13.7
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	123	26	65	306	0	0
Future Volume (vph)	123	26	65	306	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977					
Flt Protected				0.991		
Satd. Flow (prot)	1820	0	0	1846	0	0
Flt Permitted				0.991		
Satd. Flow (perm)	1820	0	0	1846	0	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	136	
Travel Time (s)	1.3			6.1	3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	28	71	333	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	404	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	123	26	65	306	0	0
Future Volume (Veh/h)	123	26	65	306	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	28	71	333	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			162		623	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		623	148
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	100
cM capacity (veh/h)			1417		427	899

Direction, Lane #	EB 1	WB 1
Volume Total	162	404
Volume Left	0	71
Volume Right	28	0
cSH	1700	1417
Volume to Capacity	0.10	0.05
Queue Length 95th (ft)	0	4
Control Delay (s)	0.0	1.7
Lane LOS		A
Approach Delay (s)	0.0	1.7
Approach LOS		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	149	23	161	146	63	121
Future Volume (vph)	149	23	161	146	63	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982				0.911	
Flt Protected				0.974	0.983	
Satd. Flow (prot)	1829	0	0	1814	1668	0
Flt Permitted				0.974	0.983	
Satd. Flow (perm)	1829	0	0	1814	1668	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	25	175	159	68	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	0	334	200	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	149	23	161	146	63	121
Future Volume (Veh/h)	149	23	161	146	63	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	25	175	159	68	132
Pedestrians				25		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		684	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		684	200
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		81	84
cM capacity (veh/h)			1387		362	821

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	187	334	200
Volume Left	0	175	68
Volume Right	25	0	132
cSH	1700	1387	574
Volume to Capacity	0.11	0.13	0.35
Queue Length 95th (ft)	0	11	39
Control Delay (s)	0.0	4.7	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	4.7	14.6
Approach LOS			B

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

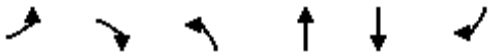
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	167	479	75	160	578
Future Volume (vph)	1	167	479	75	160	578
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	14	11	11	14	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.866		0.982			
Flt Protected					0.950	
Satd. Flow (prot)	1721	0	1768	0	1888	1987
Flt Permitted					0.950	
Satd. Flow (perm)	1721	0	1768	0	1888	1987
Link Speed (mph)	25		30			30
Link Distance (ft)	177		209			123
Travel Time (s)	4.8		4.8			2.8
Confl. Peds. (#/hr)	27			44		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	182	521	82	174	628
Shared Lane Traffic (%)						
Lane Group Flow (vph)	183	0	603	0	174	628
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.5%		ICU Level of Service B	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	167	479	75	160	578
Future Volume (Veh/h)	1	167	479	75	160	578
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	182	521	82	174	628
Pedestrians	44		27			
Lane Width (ft)	14.0		11.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	5		2			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1609	606			647	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1609	606			647	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	61			81	
cM capacity (veh/h)	86	473			893	

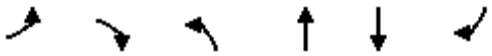
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	183	603	174	628
Volume Left	1	0	174	0
Volume Right	182	82	0	0
cSH	461	1700	893	1700
Volume to Capacity	0.40	0.35	0.19	0.37
Queue Length 95th (ft)	47	0	18	0
Control Delay (s)	17.8	0.0	10.0	0.0
Lane LOS	C		B	
Approach Delay (s)	17.8	0.0	2.2	
Approach LOS	C			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	287	311	357	449	55
Future Volume (vph)	0	287	311	357	449	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	14	14	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.865			0.985	
Flt Protected			0.950			
Satd. Flow (prot)	0	1826	1888	1987	2079	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	1826	1888	1987	2079	0
Link Speed (mph)	35			30	30	
Link Distance (ft)	139			164	164	
Travel Time (s)	2.7			3.7	3.7	
Confl. Peds. (#/hr)	20		101			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	312	338	388	488	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	312	338	388	548	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	287	311	357	449	55
Future Volume (Veh/h)	0	287	311	357	449	55
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	312	338	388	488	60
Pedestrians	101				20	
Lane Width (ft)	16.0				16.0	
Walking Speed (ft/s)	3.5				3.5	
Percent Blockage	13				3	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1703	619	649			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1703	619	649			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	27	59			
cM capacity (veh/h)	50	426	817			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	312	338	388	548
Volume Left	0	338	0	0
Volume Right	312	0	0	60
cSH	426	817	1700	1700
Volume to Capacity	0.73	0.41	0.23	0.32
Queue Length 95th (ft)	146	51	0	0
Control Delay (s)	33.3	12.5	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	33.3	5.8		0.0
Approach LOS	D			

Intersection Summary			
Average Delay	9.2		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	241	3	28	338	40	19
Future Volume (vph)	241	3	28	338	40	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.956	
Flt Protected				0.996	0.967	
Satd. Flow (prot)	1859	0	0	1855	1722	0
Flt Permitted				0.996	0.967	
Satd. Flow (perm)	1859	0	0	1855	1722	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	143			216	62	
Travel Time (s)	2.8			4.2	1.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	3	30	367	43	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	265	0	0	397	64	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	241	3	28	338	40	19
Future Volume (Veh/h)	241	3	28	338	40	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	262	3	30	367	43	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			265		690	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			265		690	264
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		89	97
cM capacity (veh/h)			1299		401	775

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	265	397	64
Volume Left	0	30	43
Volume Right	3	0	21
cSH	1700	1299	477
Volume to Capacity	0.16	0.02	0.13
Queue Length 95th (ft)	0	2	12
Control Delay (s)	0.0	0.8	13.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.8	13.7
Approach LOS			B

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	123	26	65	306	0	0
Future Volume (vph)	123	26	65	306	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977					
Flt Protected				0.991		
Satd. Flow (prot)	1820	0	0	1846	0	0
Flt Permitted				0.991		
Satd. Flow (perm)	1820	0	0	1846	0	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	57			315	145	
Travel Time (s)	1.3			6.1	3.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	28	71	333	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	404	0	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	123	26	65	306	0	0
Future Volume (Veh/h)	123	26	65	306	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	134	28	71	333	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			162		623	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		623	148
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	100
cM capacity (veh/h)			1417		427	899

Direction, Lane #	EB 1	WB 1
Volume Total	162	404
Volume Left	0	71
Volume Right	28	0
cSH	1700	1417
Volume to Capacity	0.10	0.05
Queue Length 95th (ft)	0	4
Control Delay (s)	0.0	1.7
Lane LOS		A
Approach Delay (s)	0.0	1.7
Approach LOS		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	149	23	161	146	63	121
Future Volume (vph)	149	23	161	146	63	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.982				0.911	
Flt Protected				0.974	0.983	
Satd. Flow (prot)	1829	0	0	1814	1668	0
Flt Permitted				0.974	0.983	
Satd. Flow (perm)	1829	0	0	1814	1668	0
Link Speed (mph)	35			35	30	
Link Distance (ft)	156			57	165	
Travel Time (s)	3.0			1.1	3.8	
Confl. Peds. (#/hr)						25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	162	25	175	159	68	132
Shared Lane Traffic (%)						
Lane Group Flow (vph)	187	0	0	334	200	0
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (veh/h)	149	23	161	146	63	121
Future Volume (Veh/h)	149	23	161	146	63	121
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	25	175	159	68	132
Pedestrians				25		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			187		684	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			187		684	200
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		81	84
cM capacity (veh/h)			1387		362	821

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	187	334	200
Volume Left	0	175	68
Volume Right	25	0	132
cSH	1700	1387	574
Volume to Capacity	0.11	0.13	0.35
Queue Length 95th (ft)	0	11	39
Control Delay (s)	0.0	4.7	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	4.7	14.6
Approach LOS			B

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

FUSS & O'NEILL

Appendix F

Turning Movement Counts (TMC's)
Automatic Traffic Recorder (ATR) Counts

Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

N / S: Northampton High School
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - Elm @ High School
Site Code : 3
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	3	0	3	2	0	1	1	4	2	0	0	0	2	9
Total	0	0	0	0	0	0	0	4	0	4	2	0	1	2	5	2	0	0	0	2	11
08:00 AM	0	0	0	0	0	0	0	7	0	7	3	0	2	0	5	2	0	0	0	2	14
08:15 AM	0	0	0	0	0	0	0	16	0	16	5	0	0	0	5	1	0	0	0	1	22
08:30 AM	0	0	0	0	0	0	0	30	0	30	12	0	9	0	21	10	0	0	0	10	61
08:45 AM	0	0	0	0	0	0	0	36	0	36	4	0	13	0	17	8	0	0	0	8	61
Total	0	0	0	0	0	0	0	89	0	89	24	0	24	0	48	21	0	0	0	21	158
09:00 AM	0	0	0	0	0	0	0	13	0	13	7	0	5	0	12	3	0	0	0	3	28
09:15 AM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	107	0	107	34	0	30	2	66	26	0	0	0	26	199
Apprch %	0	0	0	0		0	0	100	0		51.5	0	45.5	3		100	0	0	0		
Total %	0	0	0	0	0	0	0	53.8	0	53.8	17.1	0	15.1	1	33.2	13.1	0	0	0	13.1	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	0	95.3	0	95.3	97.1	0	70	100	84.8	92.3	0	0	0	92.3	91.5
Heavy Vehicles	0	0	0	0	0	0	0	5	0	5	1	0	9	0	10	1	0	0	0	1	16
% Heavy Vehicles	0	0	0	0	0	0	0	4.7	0	4.7	2.9	0	30	0	15.2	3.8	0	0	0	3.8	8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.8	0	0	0	3.8	0.5

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:15 AM																					
08:15 AM	0	0	0	0	0	0	0	16	0	16	5	0	0	0	5	1	0	0	0	1	22
08:30 AM	0	0	0	0	0	0	0	30	0	30	12	0	9	0	21	10	0	0	0	10	61
08:45 AM	0	0	0	0	0	0	0	36	0	36	4	0	13	0	17	8	0	0	0	8	61
09:00 AM	0	0	0	0	0	0	0	13	0	13	7	0	5	0	12	3	0	0	0	3	28
Total Volume	0	0	0	0	0	0	0	95	0	95	28	0	27	0	55	22	0	0	0	22	172
% App. Total	0	0	0	0		0	0	100	0		50.9	0	49.1	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.660	.000	.660	.583	.000	.519	.000	.655	.550	.000	.000	.000	.550	.705

Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: Northampton High School
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - Elm @ High School
Site Code : 3
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	4	0	4	1	0	2	0	3	0	0	0	0	0	7
08:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	7	0	7	1	0	0	0	1	9
Total	0	0	0	0	0	0	0	5	0	5	1	0	9	0	10	1	0	0	0	1	16
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	5	0	5	1	0	9	0	10	1	0	0	0	1	16
Apprch %	0	0	0	0		0	0	100	0		10	0	90	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	31.2	0	31.2	6.2	0	56.2	0	62.5	6.2	0	0	0	6.2	

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	4	0	4	1	0	2	0	3	0	0	0	0	0	7
08:45 AM	0	0	0	0	0	0	0	1	0	1	0	0	7	0	7	1	0	0	0	1	9
Total Volume	0	0	0	0	0	0	0	5	0	5	1	0	9	0	10	1	0	0	0	1	16
% App. Total	0	0	0	0		0	0	100	0		10	0	90	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.313	.000	.313	.250	.000	.321	.000	.357	.250	.000	.000	.000	.250	.444

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P. O. Box 468
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N / S: Riverside & Milton
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - Elm @ Riverside & Milton
Site Code : 4
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
07:30 AM	19	22	0	0	41	2	0	0	0	2	0	25	10	0	35	3	1	28	0	32	110
07:45 AM	29	27	3	0	59	4	0	0	0	4	4	43	10	0	57	1	4	59	0	64	184
Total	48	49	3	0	100	6	0	0	0	6	4	68	20	0	92	4	5	87	0	96	294
08:00 AM	30	19	4	0	53	2	0	0	0	2	0	32	8	0	40	3	0	53	0	56	151
08:15 AM	21	25	4	0	50	2	1	1	0	4	0	19	7	0	26	2	3	30	0	35	115
08:30 AM	33	24	2	0	59	5	1	0	0	6	0	28	7	0	35	4	16	33	0	53	153
08:45 AM	28	33	12	0	73	13	15	0	0	28	0	25	3	10	38	2	53	45	0	100	239
Total	112	101	22	0	235	22	17	1	0	40	0	104	25	10	139	11	72	161	0	244	658
09:00 AM	23	20	2	0	45	2	8	0	0	10	0	17	1	2	20	3	4	28	0	35	110
09:15 AM	14	15	3	0	32	1	1	0	0	2	0	12	1	3	16	1	3	26	0	30	80
Grand Total	197	185	30	0	412	31	26	1	0	58	4	201	47	15	267	19	84	302	0	405	1142
Apprch %	47.8	44.9	7.3	0		53.4	44.8	1.7	0		1.5	75.3	17.6	5.6		4.7	20.7	74.6	0		
Total %	17.3	16.2	2.6	0	36.1	2.7	2.3	0.1	0	5.1	0.4	17.6	4.1	1.3	23.4	1.7	7.4	26.4	0	35.5	
PCs and Peds																					
% PCs and Peds	100	94.1	96.7	0	97.1	100	100	100	0	100	0	96	97.9	100	95.1	94.7	95.2	96.7	0	96.3	96.5
Heavy Vehicles	0	9	1	0	10	0	0	0	0	0	0	4	1	0	5	1	4	5	0	10	25
% Heavy Vehicles	0	4.9	3.3	0	2.4	0	0	0	0	0	0	2	2.1	0	1.9	5.3	4.8	1.7	0	2.5	2.2
Bicycles	0	2	0	0	2	0	0	0	0	0	4	4	0	0	8	0	0	5	0	5	15
% Bicycles	0	1.1	0	0	0.5	0	0	0	0	0	100	2	0	0	3	0	0	1.7	0	1.2	1.3

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	30	19	4	0	53	2	0	0	0	2	0	32	8	0	40	3	0	53	0	56	151
08:15 AM	21	25	4	0	50	2	1	1	0	4	0	19	7	0	26	2	3	30	0	35	115
08:30 AM	33	24	2	0	59	5	1	0	0	6	0	28	7	0	35	4	16	33	0	53	153
08:45 AM	28	33	12	0	73	13	15	0	0	28	0	25	3	10	38	2	53	45	0	100	239
Total Volume	112	101	22	0	235	22	17	1	0	40	0	104	25	10	139	11	72	161	0	244	658
% App. Total	47.7	43	9.4	0		55	42.5	2.5	0		0	74.8	18	7.2		4.5	29.5	66	0		
PHF	.848	.765	.458	.000	.805	.423	.283	.250	.000	.357	.000	.813	.781	.250	.869	.688	.340	.759	.000	.610	.688

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N / S: Riverside & Milton
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - Elm @ Riverside & Milton
Site Code : 4
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
07:30 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
07:45 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
08:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	4	2	0	7	8
Total	0	5	1	0	6	0	0	0	0	0	0	1	1	0	2	1	4	4	0	9	17
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Grand Total	0	9	1	0	10	0	0	0	0	0	0	4	1	0	5	1	4	5	0	10	25
Apprch %	0	90	10	0		0	0	0	0		0	80	20	0		10	40	50	0		
Total %	0	36	4	0	40	0	0	0	0	0	0	16	4	0	20	4	16	20	0	40	

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	2	0	2	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
08:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	4	2	0	7	8
Total Volume	0	5	1	0	6	0	0	0	0	0	0	1	1	0	2	1	4	4	0	9	17
% App. Total	0	83.3	16.7	0		0	0	0	0		0	50	50	0		11.1	44.4	44.4	0		
PHF	.000	.313	.250	.000	.375	.000	.000	.000	.000	.000	.000	.250	.250	.000	.250	.250	.250	.500	.000	.321	.531

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N / S: North Elm Street
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - North Elm @ Elm
Site Code : 2
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	9	95	0	0	104	0	0	0	0	0	0	88	36	0	124	46	0	2	0	48	276
07:45 AM	9	94	0	0	103	0	0	0	0	0	0	92	50	5	147	102	0	9	0	111	361
Total	18	189	0	0	207	0	0	0	0	0	0	180	86	5	271	148	0	11	0	159	637
08:00 AM	4	111	0	0	115	0	0	0	0	0	0	73	51	4	128	88	0	3	1	92	335
08:15 AM	10	127	0	0	137	0	0	0	0	0	0	61	57	1	119	53	0	2	1	56	312
08:30 AM	17	95	0	0	112	0	1	0	0	1	0	54	67	22	143	56	0	4	3	63	319
08:45 AM	32	115	0	0	147	0	0	0	0	0	0	60	57	63	180	41	0	13	0	54	381
Total	63	448	0	0	511	0	1	0	0	1	0	248	232	90	570	238	0	22	5	265	1347
09:00 AM	6	84	0	0	90	0	0	0	0	0	0	53	44	10	107	54	0	5	4	63	260
09:15 AM	7	62	0	0	69	0	0	0	0	0	0	57	31	4	92	39	0	4	1	44	205
Grand Total	94	783	0	0	877	0	1	0	0	1	0	538	393	109	1040	479	0	42	10	531	2449
Apprch %	10.7	89.3	0	0		0	100	0	0		0	51.7	37.8	10.5		90.2	0	7.9	1.9		
Total %	3.8	32	0	0	35.8	0	0	0	0	0	0	22	16	4.5	42.5	19.6	0	1.7	0.4	21.7	
PCs and Peds																					
% PCs and Peds	91.5	96.3	0	0	95.8	0	0	0	0	0	0	95.7	95.4	100	96.1	97.9	0	97.6	100	97.9	96.3
Heavy Vehicles	8	22	0	0	30	0	0	0	0	0	0	21	15	0	36	9	0	1	0	10	76
% Heavy Vehicles	8.5	2.8	0	0	3.4	0	0	0	0	0	0	3.9	3.8	0	3.5	1.9	0	2.4	0	1.9	3.1
Bicycles	0	7	0	0	7	0	1	0	0	1	0	2	3	0	5	1	0	0	0	1	14
% Bicycles	0	0.9	0	0	0.8	0	100	0	0	100	0	0.4	0.8	0	0.5	0.2	0	0	0	0.2	0.6

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	111	0	0	115	0	0	0	0	0	0	73	51	4	128	88	0	3	1	92	335
08:15 AM	10	127	0	0	137	0	0	0	0	0	0	61	57	1	119	53	0	2	1	56	312
08:30 AM	17	95	0	0	112	0	1	0	0	1	0	54	67	22	143	56	0	4	3	63	319
08:45 AM	32	115	0	0	147	0	0	0	0	0	0	60	57	63	180	41	0	13	0	54	381
Total Volume	63	448	0	0	511	0	1	0	0	1	0	248	232	90	570	238	0	22	5	265	1347
% App. Total	12.3	87.7	0	0		0	100	0	0		0	43.5	40.7	15.8		89.8	0	8.3	1.9		
PHF	.492	.882	.000	.000	.869	.000	.250	.000	.000	.250	.000	.849	.866	.357	.792	.676	.000	.423	.417	.720	.884

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N / S: North Elm Street
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - North Elm @ Elm
Site Code : 2
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	3	3	0	0	6	0	0	0	0	0	0	2	3	0	5	2	0	0	0	2	13
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	2	2	0	4	1	0	0	0	1	8
Total	3	6	0	0	9	0	0	0	0	0	0	4	5	0	9	3	0	0	0	3	21
08:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	9
08:15 AM	0	4	0	0	4	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	6
08:30 AM	5	1	0	0	6	0	0	0	0	0	0	4	5	0	9	2	0	0	0	2	17
08:45 AM	0	3	0	0	3	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	6
Total	5	10	0	0	15	0	0	0	0	0	0	10	8	0	18	5	0	0	0	5	38
09:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	7
09:15 AM	0	4	0	0	4	0	0	0	0	0	0	3	2	0	5	0	0	1	0	1	10
Grand Total	8	22	0	0	30	0	0	0	0	0	0	21	15	0	36	9	0	1	0	10	76
Apprch %	26.7	73.3	0	0		0	0	0	0		0	58.3	41.7	0		90	0	10	0		
Total %	10.5	28.9	0	0	39.5	0	0	0	0	0	0	27.6	19.7	0	47.4	11.8	0	1.3	0	13.2	

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	2	2	0	4	1	0	0	0	1	8
08:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	9
08:15 AM	0	4	0	0	4	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	6
08:30 AM	5	1	0	0	6	0	0	0	0	0	0	4	5	0	9	2	0	0	0	2	17
Total Volume	5	10	0	0	15	0	0	0	0	0	0	11	8	0	19	6	0	0	0	6	40
% App. Total	33.3	66.7	0	0		0	0	0	0		0	57.9	42.1	0		100	0	0	0		
PHF	.250	.625	.000	.000	.625	.000	.000	.000	.000	.000	.000	.688	.400	.000	.528	.500	.000	.000	.000	.500	.588

Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

N / S: North Elm Street
E / W: Woodlawn Avenue
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - North Elm @ Woodlawn
Site Code : 1
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	0	117	25	0	142	16	0	0	0	16	7	106	0	1	114	0	0	0	0	0	272
07:45 AM	0	133	64	0	197	23	0	0	4	27	15	112	0	3	130	0	0	0	0	0	354
Total	0	250	89	0	339	39	0	0	4	43	22	218	0	4	244	0	0	0	0	0	626
08:00 AM	0	153	44	0	197	28	0	0	0	28	3	97	0	4	104	0	0	0	0	0	329
08:15 AM	0	154	22	0	176	31	0	0	1	32	10	90	0	4	104	0	0	0	0	0	312
08:30 AM	0	124	29	0	153	29	0	0	4	33	16	88	0	17	121	0	0	0	0	0	307
08:45 AM	0	116	38	0	154	42	0	0	3	45	15	89	0	45	149	0	0	0	0	0	348
Total	0	547	133	0	680	130	0	0	8	138	44	364	0	70	478	0	0	0	0	0	1296
09:00 AM	0	120	25	0	145	16	0	0	1	17	11	70	0	4	85	0	0	0	0	0	247
09:15 AM	0	81	24	0	105	22	0	0	4	26	7	65	0	2	74	0	0	0	0	0	205
Grand Total	0	998	271	0	1269	207	0	0	17	224	84	717	0	80	881	0	0	0	0	0	2374
Apprch %	0	78.6	21.4	0		92.4	0	0	7.6		9.5	81.4	0	9.1		0	0	0	0		
Total %	0	42	11.4	0	53.5	8.7	0	0	0.7	9.4	3.5	30.2	0	3.4	37.1	0	0	0	0	0	
PCs and Peds																					
% PCs and Peds	0	97.5	98.9	0	97.8	98.1	0	0	94.1	97.8	98.8	96.5	0	100	97	0	0	0	0	0	97.5
Heavy Vehicles	0	25	3	0	28	4	0	0	1	5	1	25	0	0	26	0	0	0	0	0	59
% Heavy Vehicles	0	2.5	1.1	0	2.2	1.9	0	0	5.9	2.2	1.2	3.5	0	0	3	0	0	0	0	0	2.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	133	64	0	197	23	0	0	4	27	15	112	0	3	130	0	0	0	0	0	354
08:00 AM	0	153	44	0	197	28	0	0	0	28	3	97	0	4	104	0	0	0	0	0	329
08:15 AM	0	154	22	0	176	31	0	0	1	32	10	90	0	4	104	0	0	0	0	0	312
08:30 AM	0	124	29	0	153	29	0	0	4	33	16	88	0	17	121	0	0	0	0	0	307
Total Volume	0	564	159	0	723	111	0	0	9	120	44	387	0	28	459	0	0	0	0	0	1302
% App. Total	0	78	22	0		92.5	0	0	7.5		9.6	84.3	0	6.1		0	0	0	0		
PHF	.000	.916	.621	.000	.918	.895	.000	.000	.563	.909	.688	.864	.000	.412	.883	.000	.000	.000	.000	.000	.919

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P. O. Box 468
Belchertown, Massachusetts
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N / S: North Elm Street
E / W: Woodlawn Avenue
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : AM Peak - North Elm @ Woodlawn
Site Code : 1
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:30 AM	0	6	0	0	6	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	11
07:45 AM	0	2	1	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Total	0	8	1	0	9	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	16
08:00 AM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
08:15 AM	0	4	0	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
08:30 AM	0	1	1	0	2	1	0	0	1	2	0	5	0	0	5	0	0	0	0	0	9
08:45 AM	0	3	0	0	3	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	7
Total	0	12	1	0	13	3	0	0	1	4	0	12	0	0	12	0	0	0	0	0	29
09:00 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
09:15 AM	0	3	1	0	4	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	10
Grand Total	0	25	3	0	28	4	0	0	1	5	1	25	0	0	26	0	0	0	0	0	59
Apprch %	0	89.3	10.7	0		80	0	0	20		3.8	96.2	0	0		0	0	0	0		
Total %	0	42.4	5.1	0	47.5	6.8	0	0	1.7	8.5	1.7	42.4	0	0	44.1	0	0	0	0	0	

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:30 AM																					
08:30 AM	0	1	1	0	2	1	0	0	1	2	0	5	0	0	5	0	0	0	0	0	9
08:45 AM	0	3	0	0	3	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	7
09:00 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
09:15 AM	0	3	1	0	4	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	10
Total Volume	0	9	2	0	11	3	0	0	1	4	0	15	0	0	15	0	0	0	0	0	30
% App. Total	0	81.8	18.2	0		75	0	0	25		0	100	0	0		0	0	0	0		
PHF	.000	.750	.500	.000	.688	.750	.000	.000	.250	.500	.000	.750	.000	.000	.750	.000	.000	.000	.000	.000	.750

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P. O. Box 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

N / S: Northampton High School
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - Elm @ High School
Site Code : 3
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	5	0	5	4	0	0	0	4	0	0	0	0	0	9
03:15 PM	0	0	0	0	0	0	0	6	0	6	4	0	2	0	6	0	0	0	0	0	12
03:30 PM	0	0	0	0	0	0	0	6	0	6	15	0	9	0	24	2	0	0	0	2	32
03:45 PM	0	0	0	0	0	0	0	7	0	7	13	0	4	0	17	1	0	0	0	1	25
Total	0	0	0	0	0	0	0	24	0	24	36	0	15	0	51	3	0	0	0	3	78
04:00 PM	0	0	0	0	0	0	0	7	0	7	5	0	3	0	8	0	0	0	0	0	15
04:15 PM	0	0	0	0	0	0	0	4	0	4	3	0	0	0	3	1	0	0	0	1	8
04:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	3	0	6	2	0	0	0	2	8
04:45 PM	0	0	0	0	0	0	0	2	0	2	5	0	0	0	5	1	0	0	0	1	8
Total	0	0	0	0	0	0	0	13	0	13	16	0	6	0	22	4	0	0	0	4	39
Grand Total	0	0	0	0	0	0	0	37	0	37	52	0	21	0	73	7	0	0	0	7	117
Apprch %	0	0	0	0		0	0	100	0		71.2	0	28.8	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	31.6	0	31.6	44.4	0	17.9	0	62.4	6	0	0	0	6	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	0	94.6	0	94.6	90.4	0	81	0	87.7	100	0	0	0	100	90.6
Heavy Vehicles	0	0	0	0	0	0	0	1	0	1	5	0	4	0	9	0	0	0	0	0	10
% Heavy Vehicles	0	0	0	0	0	0	0	2.7	0	2.7	9.6	0	19	0	12.3	0	0	0	0	0	8.5
Bicycles	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	2.7	0	2.7	0	0	0	0	0	0	0	0	0	0	0.9

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	0	0	0	0	0	0	6	0	6	4	0	2	0	6	0	0	0	0	0	12
03:30 PM	0	0	0	0	0	0	0	6	0	6	15	0	9	0	24	2	0	0	0	2	32
03:45 PM	0	0	0	0	0	0	0	7	0	7	13	0	4	0	17	1	0	0	0	1	25
04:00 PM	0	0	0	0	0	0	0	7	0	7	5	0	3	0	8	0	0	0	0	0	15
Total Volume	0	0	0	0	0	0	0	26	0	26	37	0	18	0	55	3	0	0	0	3	84
% App. Total	0	0	0	0		0	0	100	0		67.3	0	32.7	0		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.929	.000	.929	.617	.000	.500	.000	.573	.375	.000	.000	.000	.375	.656

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N / S: Northampton High School
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - Elm @ High School
Site Code : 3
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	1	0	1	5	0	4	0	9	0	0	0	0	0	10
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	5	0	4	0	9	0	0	0	0	0	10
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	1	0	1	5	0	4	0	9	0	0	0	0	0	10
Apprch %	0	0	0	0		0	0	100	0		55.6	0	44.4	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	10	0	10	50	0	40	0	90	0	0	0	0	0	

	From North					Elm From East					High School From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	1	0	1	5	0	4	0	9	0	0	0	0	0	10
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	0	1	5	0	4	0	9	0	0	0	0	0	10
% App. Total	0	0	0	0		0	0	100	0		55.6	0	44.4	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250

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N / S: Riverside & Milton
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - Elm @ Riverside & Milton
Site Code : 4
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
03:00 PM	27	30	9	0	66	4	2	0	0	6	0	26	2	5	33	7	3	31	0	41	146
03:15 PM	23	32	14	0	69	3	3	0	0	6	2	23	3	3	31	13	11	35	0	59	165
03:30 PM	38	35	22	0	95	10	31	1	0	42	1	12	6	15	34	4	8	29	0	41	212
03:45 PM	35	31	16	0	82	8	6	0	0	14	0	24	4	5	33	10	8	31	0	49	178
Total	123	128	61	0	312	25	42	1	0	68	3	85	15	28	131	34	30	126	0	190	701
04:00 PM	33	34	12	0	79	3	1	0	0	4	0	19	4	2	25	3	6	24	0	33	141
04:15 PM	30	49	11	0	90	2	4	0	0	6	0	35	3	3	41	4	2	31	0	37	174
04:30 PM	25	43	10	0	78	5	1	0	0	6	0	26	2	5	33	17	1	39	0	57	174
04:45 PM	29	44	8	0	81	5	4	1	0	10	1	28	3	12	44	0	1	39	0	40	175
Total	117	170	41	0	328	15	10	1	0	26	1	108	12	22	143	24	10	133	0	167	664
Grand Total	240	298	102	0	640	40	52	2	0	94	4	193	27	50	274	58	40	259	0	357	1365
Apprch %	37.5	46.6	15.9	0		42.6	55.3	2.1	0		1.5	70.4	9.9	18.2		16.2	11.2	72.5	0		
Total %	17.6	21.8	7.5	0	46.9	2.9	3.8	0.1	0	6.9	0.3	14.1	2	3.7	20.1	4.2	2.9	19	0	26.2	
PCs and Peds																					
% PCs and Peds	93.3	99	95.1	0	96.2	92.5	100	100	0	96.8	100	97.9	100	100	98.5	96.6	87.5	96.5	0	95.5	96.6
Heavy Vehicles	8	1	2	0	11	2	0	0	0	2	0	1	0	0	1	1	4	6	0	11	25
% Heavy Vehicles	3.3	0.3	2	0	1.7	5	0	0	0	2.1	0	0.5	0	0	0.4	1.7	10	2.3	0	3.1	1.8
Bicycles	8	2	3	0	13	1	0	0	0	1	0	3	0	0	3	1	1	3	0	5	22
% Bicycles	3.3	0.7	2.9	0	2	2.5	0	0	0	1.1	0	1.6	0	0	1.1	1.7	2.5	1.2	0	1.4	1.6

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	38	35	22	0	95	10	31	1	0	42	1	12	6	15	34	4	8	29	0	41	212
03:45 PM	35	31	16	0	82	8	6	0	0	14	0	24	4	5	33	10	8	31	0	49	178
04:00 PM	33	34	12	0	79	3	1	0	0	4	0	19	4	2	25	3	6	24	0	33	141
04:15 PM	30	49	11	0	90	2	4	0	0	6	0	35	3	3	41	4	2	31	0	37	174
Total Volume	136	149	61	0	346	23	42	1	0	66	1	90	17	25	133	21	24	115	0	160	705
% App. Total	39.3	43.1	17.6	0		34.8	63.6	1.5	0		0.8	67.7	12.8	18.8		13.1	15	71.9	0		
PHF	.895	.760	.693	.000	.911	.575	.339	.250	.000	.393	.250	.643	.708	.417	.811	.525	.750	.927	.000	.816	.831

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N / S: Riverside & Milton
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City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - Elm @ Riverside & Milton
Site Code : 4
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:15 PM	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	1	1	2	0	4	7
03:30 PM	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5	10
03:45 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Total	8	0	2	0	10	1	0	0	0	1	0	0	0	0	0	1	4	5	0	10	21
04:00 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	4
Grand Total	8	1	2	0	11	2	0	0	0	2	0	1	0	0	1	1	4	6	0	11	25
Apprch %	72.7	9.1	18.2	0		100	0	0	0		0	100	0	0		9.1	36.4	54.5	0		
Total %	32	4	8	0	44	8	0	0	0	8	0	4	0	0	4	4	16	24	0	44	

	Elm From East					Milton From South					Riverside From Southwest					Elm From West					
Start Time	Thru	Bear Left	Left	Peds	App. Total	Right	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	1	1	2	0	4	7
03:30 PM	4	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5	10
03:45 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
04:00 PM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	2
Total Volume	8	0	2	0	10	1	0	0	0	1	0	1	0	0	1	1	4	5	0	10	22
% App. Total	80	0	20	0		100	0	0	0		0	100	0	0		10	40	50	0		
PHF	.500	.000	.500	.000	.500	.250	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.500	.417	.000	.500	.550

Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

N / S: North Elm Street
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - North Elm @ Elm
Site Code : 2
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	7	99	0	0	106	0	1	0	0	1	0	78	70	9	157	57	0	7	0	64	328
03:15 PM	18	104	0	0	122	0	0	0	0	0	0	86	72	5	163	51	0	6	0	57	342
03:30 PM	14	113	0	0	127	0	0	0	0	0	0	90	72	82	244	52	0	10	13	75	446
03:45 PM	12	103	0	0	115	0	0	0	0	0	0	79	76	5	160	81	0	4	7	92	367
Total	51	419	0	0	470	0	1	0	0	1	0	333	290	101	724	241	0	27	20	288	1483
04:00 PM	5	90	0	0	95	0	0	0	0	0	0	76	80	0	156	46	0	5	1	52	303
04:15 PM	13	91	0	0	104	0	0	0	0	0	0	55	88	2	145	62	1	6	4	73	322
04:30 PM	8	97	0	0	105	0	0	0	0	0	0	76	73	6	155	70	0	6	3	79	339
04:45 PM	9	103	0	0	112	0	0	0	0	0	0	65	76	4	145	72	0	5	1	78	335
Total	35	381	0	0	416	0	0	0	0	0	0	272	317	12	601	250	1	22	9	282	1299
Grand Total	86	800	0	0	886	0	1	0	0	1	0	605	607	113	1325	491	1	49	29	570	2782
Apprch %	9.7	90.3	0	0		0	100	0	0		0	45.7	45.8	8.5		86.1	0.2	8.6	5.1		
Total %	3.1	28.8	0	0	31.8	0	0	0	0	0	0	21.7	21.8	4.1	47.6	17.6	0	1.8	1	20.5	
PCs and Peds																					
% PCs and Peds	95.3	95.2	0	0	95.3	0	0	0	0	0	0	97.2	97.4	100	97.5	96.5	0	95.9	100	96.5	96.5
Heavy Vehicles	4	32	0	0	36	0	0	0	0	0	0	13	10	0	23	12	0	2	0	14	73
% Heavy Vehicles	4.7	4	0	0	4.1	0	0	0	0	0	0	2.1	1.6	0	1.7	2.4	0	4.1	0	2.5	2.6
Bicycles	0	6	0	0	6	0	1	0	0	1	0	4	6	0	10	5	1	0	0	6	23
% Bicycles	0	0.8	0	0	0.7	0	100	0	0	100	0	0.7	1	0	0.8	1	100	0	0	1.1	0.8

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	7	99	0	0	106	0	1	0	0	1	0	78	70	9	157	57	0	7	0	64	328
03:15 PM	18	104	0	0	122	0	0	0	0	0	0	86	72	5	163	51	0	6	0	57	342
03:30 PM	14	113	0	0	127	0	0	0	0	0	0	90	72	82	244	52	0	10	13	75	446
03:45 PM	12	103	0	0	115	0	0	0	0	0	0	79	76	5	160	81	0	4	7	92	367
Total Volume	51	419	0	0	470	0	1	0	0	1	0	333	290	101	724	241	0	27	20	288	1483
% App. Total	10.9	89.1	0	0		0	100	0	0		0	46	40.1	14		83.7	0	9.4	6.9		
PHF	.708	.927	.000	.000	.925	.000	.250	.000	.000	.250	.000	.925	.954	.308	.742	.744	.000	.675	.385	.783	.831

Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

N / S: North Elm Street
E / W: Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - North Elm @ Elm
Site Code : 2
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	1	5	0	0	6	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	9
03:15 PM	2	4	0	0	6	0	0	0	0	0	0	2	3	0	5	1	0	0	0	1	12
03:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	2	0	5	8	0	0	0	8	16
03:45 PM	0	7	0	0	7	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	10
Total	3	19	0	0	22	0	0	0	0	0	0	8	8	0	16	9	0	0	0	9	47
04:00 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	1	0	2	0	3	8
04:15 PM	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
04:30 PM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	5
04:45 PM	0	3	0	0	3	0	0	0	0	0	0	2	2	0	4	1	0	0	0	1	8
Total	1	13	0	0	14	0	0	0	0	0	0	5	2	0	7	3	0	2	0	5	26
Grand Total	4	32	0	0	36	0	0	0	0	0	0	13	10	0	23	12	0	2	0	14	73
Apprch %	11.1	88.9	0	0		0	0	0	0		0	56.5	43.5	0		85.7	0	14.3	0		
Total %	5.5	43.8	0	0	49.3	0	0	0	0	0	0	17.8	13.7	0	31.5	16.4	0	2.7	0	19.2	

	North Elm From North					From East					North Elm From South					Elm From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	1	5	0	0	6	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	9
03:15 PM	2	4	0	0	6	0	0	0	0	0	0	2	3	0	5	1	0	0	0	1	12
03:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	2	0	5	8	0	0	0	8	16
03:45 PM	0	7	0	0	7	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	10
Total Volume	3	19	0	0	22	0	0	0	0	0	0	8	8	0	16	9	0	0	0	9	47
% App. Total	13.6	86.4	0	0		0	0	0	0		0	50	50	0		100	0	0	0		
PHF	.375	.679	.000	.000	.786	.000	.000	.000	.000	.000	.000	.667	.667	.000	.800	.281	.000	.000	.000	.281	.734

Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: North Elm Street
E / W: Woodlawn Avenue
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - North Elm @ Woodlawn
Site Code : 1
Start Date : 4/5/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	128	26	0	154	31	0	1	5	37	12	112	0	4	128	0	0	0	0	0	319
03:15 PM	0	136	24	0	160	38	0	0	3	41	17	112	0	3	132	0	0	0	0	0	333
03:30 PM	0	133	32	0	165	52	0	0	8	60	22	107	0	31	160	0	0	0	0	0	385
03:45 PM	0	142	40	0	182	35	0	0	11	46	19	116	0	6	141	0	0	0	0	0	369
Total	0	539	122	0	661	156	0	1	27	184	70	447	0	44	561	0	0	0	0	0	1406
04:00 PM	0	117	25	0	142	37	0	1	9	47	12	112	0	1	125	0	0	0	0	0	314
04:15 PM	0	112	37	0	149	42	0	1	7	50	12	92	0	6	110	0	0	0	0	0	309
04:30 PM	0	136	34	0	170	29	0	0	10	39	8	115	0	13	136	0	0	0	0	0	345
04:45 PM	0	139	32	0	171	42	0	1	11	54	10	101	0	7	118	0	0	0	0	0	343
Total	0	504	128	0	632	150	0	3	37	190	42	420	0	27	489	0	0	0	0	0	1311
Grand Total	0	1043	250	0	1293	306	0	4	64	374	112	867	0	71	1050	0	0	0	0	0	2717
Apprch %	0	80.7	19.3	0		81.8	0	1.1	17.1		10.7	82.6	0	6.8		0	0	0	0		
Total %	0	38.4	9.2	0	47.6	11.3	0	0.1	2.4	13.8	4.1	31.9	0	2.6	38.6	0	0	0	0	0	
PCs and Peds	0	1008	246	0	1254	306	0	4	62	372	112	850	0	71	1033	0	0	0	0	0	2659
% PCs and Peds	0	96.6	98.4	0	97	100	0	100	96.9	99.5	100	98	0	100	98.4	0	0	0	0	0	97.9
Heavy Vehicles	0	35	4	0	39	0	0	0	2	2	0	17	0	0	17	0	0	0	0	0	58
% Heavy Vehicles	0	3.4	1.6	0	3	0	0	0	3.1	0.5	0	2	0	0	1.6	0	0	0	0	0	2.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	128	26	0	154	31	0	1	5	37	12	112	0	4	128	0	0	0	0	0	319
03:15 PM	0	136	24	0	160	38	0	0	3	41	17	112	0	3	132	0	0	0	0	0	333
03:30 PM	0	133	32	0	165	52	0	0	8	60	22	107	0	31	160	0	0	0	0	0	385
03:45 PM	0	142	40	0	182	35	0	0	11	46	19	116	0	6	141	0	0	0	0	0	369
Total Volume	0	539	122	0	661	156	0	1	27	184	70	447	0	44	561	0	0	0	0	0	1406
% App. Total	0	81.5	18.5	0		84.8	0	0.5	14.7		12.5	79.7	0	7.8		0	0	0	0		
PHF	.000	.949	.763	.000	.908	.750	.000	.250	.614	.767	.795	.963	.000	.355	.877	.000	.000	.000	.000	.000	.913

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N / S: North Elm Street
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City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

File Name : PM Peak - North Elm @ Woodlawn
Site Code : 1
Start Date : 4/5/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	5	0	0	5	0	0	0	1	1	0	3	0	0	3	0	0	0	0	0	9
03:15 PM	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	10
03:30 PM	0	5	3	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11
03:45 PM	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
Total	0	20	3	0	23	0	0	0	1	1	0	13	0	0	13	0	0	0	0	0	37
04:00 PM	0	4	1	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
04:15 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
04:45 PM	0	4	0	0	4	0	0	0	1	1	0	2	0	0	2	0	0	0	0	0	7
Total	0	15	1	0	16	0	0	0	1	1	0	4	0	0	4	0	0	0	0	0	21
Grand Total	0	35	4	0	39	0	0	0	2	2	0	17	0	0	17	0	0	0	0	0	58
Apprch %	0	89.7	10.3	0		0	0	0	100		0	100	0	0		0	0	0	0		
Total %	0	60.3	6.9	0	67.2	0	0	0	3.4	3.4	0	29.3	0	0	29.3	0	0	0	0	0	

	North Elm From North					Woodlawn From East					North Elm From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	5	0	0	5	0	0	0	1	1	0	3	0	0	3	0	0	0	0	0	9
03:15 PM	0	4	0	0	4	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	10
03:30 PM	0	5	3	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11
03:45 PM	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
Total Volume	0	20	3	0	23	0	0	0	1	1	0	13	0	0	13	0	0	0	0	0	37
% App. Total	0	87	13	0		0	0	0	100		0	100	0	0		0	0	0	0		
PHF	.000	.833	.250	.000	.719	.000	.000	.000	.250	.250	.000	.542	.000	.000	.542	.000	.000	.000	.000	.000	.841

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Start Time	05-Apr-22 Tue	Eastbound A.M.	Eastbound P.M.	Westbound A.M.	Westbound P.M.	Combined A.M.	Combined P.M.	06-Apr- Wed	Eastbound A.M.	Eastbound P.M.	Westbound A.M.	Westbound P.M.	Combined A.M.	Combined P.M.
12:00		1	37	1	33	2	70		0	32	2	29	2	61
12:15		1	30	1	35	2	65		0	38	1	38	1	76
12:30		0	30	2	22	2	52		0	34	1	26	1	60
12:45		0	33	2	31	2	64		0	31	0	30	0	61
01:00		1	25	1	28	2	53		0	28	2	28	2	56
01:15		0	27	0	33	0	60		1	47	0	29	1	76
01:30		0	46	0	29	0	75		0	27	0	20	0	47
01:45		0	48	0	22	0	70		0	49	1	37	1	86
02:00		0	63	0	35	0	98		0	43	0	21	0	64
02:15		1	44	0	35	1	79		0	34	0	40	0	74
02:30		1	26	0	40	1	66		0	37	0	32	0	69
02:45		1	30	1	35	2	65		0	43	1	30	1	73
03:00		0	35	0	31	0	66		0	44	0	36	0	80
03:15		0	42	0	44	0	***86***		0	29	0	43	0	72
03:30		0	***58***	0	36	0	***94***		0	***67***	0	43	0	***110***
03:45		1	***62***	1	38	2	***100***		2	***60***	1	39	3	***99***
04:00		0	***39***	0	38	0	***77***		1	***49***	0	36	1	***85***
04:15		1	***43***	0	41	1	84		0	***54***	0	***50***	0	***104***
04:30		0	46	1	29	1	75		2	66	0	***38***	2	104
04:45		4	45	0	***42***	4	87		1	43	0	***32***	1	75
05:00		1	47	0	***46***	1	93		3	39	1	***59***	4	98
05:15		4	43	1	***38***	5	81		1	36	0	45	1	81
05:30		6	35	0	***40***	6	75		8	41	1	32	9	73
05:45		9	36	1	41	10	77		9	32	2	33	11	65
06:00		3	37	3	34	6	71		7	25	2	32	9	57
06:15		9	26	3	31	12	57		7	25	1	26	8	51
06:30		5	30	6	21	11	51		9	29	7	29	16	58
06:45		11	24	7	20	18	44		13	22	9	18	22	40
07:00		23	20	6	27	29	47		15	18	6	27	21	45
07:15		26	18	11	22	37	40		29	18	10	17	39	35
07:30		32	21	19	23	51	44		***39***	14	18	20	57	34
07:45		***72***	14	24	18	96	32		***64***	7	24	15	88	22
08:00		***52***	13	***28***	19	***80***	32		***54***	12	***27***	15	***81***	27
08:15		***32***	15	***34***	17	***66***	32		***32***	5	***40***	11	***72***	16
08:30		***48***	11	***35***	18	***83***	29		37	12	***32***	11	***69***	23
08:45		52	6	***59***	11	***111***	17		56	11	***58***	12	***114***	23
09:00		39	11	19	10	58	21		51	8	23	6	74	14
09:15		29	1	22	4	51	5		28	6	16	9	44	15
09:30		40	5	20	5	60	10		34	3	30	7	64	10
09:45		29	2	25	1	54	3		23	7	11	6	34	13
10:00		25	5	20	5	45	10		31	5	22	3	53	8
10:15		35	2	28	11	63	13		31	6	17	4	48	10
10:30		39	5	22	4	61	9		31	5	22	3	53	8
10:45		29	4	21	0	50	4		25	0	26	6	51	6
11:00		27	3	30	4	57	7		21	1	22	3	43	4
11:15		22	4	27	2	49	6		33	5	25	1	58	6
11:30		42	1	23	0	65	1		31	1	13	1	44	2
11:45		34	2	31	3	65	5		37	1	24	5	61	6
Total		787	1250	535	1152	1322	2402		766	1249	498	1133	1264	2382
Day Total		2037		1687		3724			2015		1631		3646	
% Total		21.1%	33.6%	14.4%	30.9%				21.0%	34.3%	13.7%	31.1%		
Peak	-	07:45	03:30	08:00	04:45	08:00	03:15	-	07:30	03:30	08:00	04:15	08:00	03:30
Vol.	-	204	202	156	166	340	357	-	189	230	157	179	336	398
P.H.F.		0.708	0.802	0.661	0.902	0.766	0.893		0.738	0.858	0.677	0.758	0.737	0.905

ADT	ADT 3,685	AADT 3,685

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		85th	95th
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
04/05/22	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	34	34
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
02:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3	32	34
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
04:00	0	0	1	1	2	1	0	0	0	0	0	0	0	0	5	36	38
05:00	1	0	1	6	8	4	0	0	0	0	0	0	0	0	20	36	38
06:00	0	0	3	9	11	3	1	**1**	0	0	0	0	0	0	28	36	43
07:00	0	0	12	42	**76**	16	**7**	0	0	0	0	0	0	0	153	35	39
08:00	**2**	2	15	**66**	73	**24**	1	0	0	0	0	**1**	0	0	**184**	34	38
09:00	0	1	7	59	53	15	2	0	0	0	0	0	0	0	137	34	38
10:00	1	**6**	23	58	36	3	0	0	0	0	0	0	**1**	0	128	32	34
11:00	2	3	**32**	53	28	6	1	0	0	0	0	0	0	0	125	32	35
12 PM	3	7	23	53	37	6	1	0	0	0	0	0	0	0	130	33	35
13:00	3	1	21	70	39	7	**4**	0	0	0	0	0	0	**1**	146	33	37
14:00	**12**	11	25	70	39	5	1	0	0	0	0	0	0	0	163	32	34
15:00	8	**17**	**36**	**75**	48	11	1	0	0	0	0	0	0	1	**197**	33	35
16:00	5	8	34	64	51	10	0	**1**	0	0	0	0	0	0	173	33	36
17:00	1	3	17	59	**59**	**22**	0	0	0	0	0	0	0	0	161	34	38
18:00	0	0	12	49	45	7	4	0	0	0	0	0	0	0	117	34	38
19:00	2	0	6	31	25	7	1	1	0	0	0	0	0	0	73	34	38
20:00	0	1	7	11	20	5	1	0	0	0	0	0	0	0	45	34	38
21:00	0	1	0	7	10	1	0	0	0	0	0	0	0	0	19	34	35
22:00	1	2	2	4	4	2	1	0	0	0	0	0	0	0	16	36	40
23:00	0	0	1	3	2	2	2	0	0	0	0	0	0	0	10	41	43
Total	41	63	278	793	670	157	28	3	0	0	0	1	1	2	2037		
Percent	2.0%	3.1%	13.6%	38.9%	32.9%	7.7%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	08:00	10:00	11:00	08:00	07:00	08:00	07:00	06:00				08:00	10:00		08:00		
Vol.	2	6	32	66	76	24	7	1				1	1		184		
PM Peak	14:00	15:00	15:00	15:00	17:00	17:00	13:00	16:00						13:00	15:00		
Vol.	12	17	36	75	59	22	4	1						1	197		

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	44	44
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	33	34
04:00	0	0	0	1	3	0	0	0	0	0	0	0	0	0	4	34	34
05:00	0	0	1	6	12	2	0	0	0	0	0	0	0	0	21	34	37
06:00	0	0	4	10	14	7	1	0	0	0	0	0	0	0	36	36	39
07:00	1	1	15	56	50	**19**	**5**	0	0	0	0	0	0	0	147	35	39
08:00	**4**	4	28	**76**	**54**	11	1	**1**	0	0	0	0	0	0	**179**	33	36
09:00	3	**7**	**30**	50	39	5	0	0	**1**	0	0	0	0	**1**	136	33	34
10:00	1	2	23	52	34	4	1	0	0	0	0	**1**	0	0	118	33	35
11:00	1	4	23	44	39	10	1	0	0	0	0	0	0	0	122	34	37
12 PM	1	8	16	53	45	10	2	0	0	0	0	0	0	0	135	34	37
13:00	0	3	21	70	48	9	0	0	0	0	0	0	0	0	151	33	35
14:00	**6**	6	**27**	57	50	8	2	0	0	0	0	0	0	**1**	157	33	36
15:00	4	**20**	27	68	**68**	11	1	**1**	0	0	0	0	0	0	200	33	36
16:00	6	2	12	**113**	68	9	1	1	0	0	0	0	0	0	**212**	33	35
17:00	0	0	10	45	66	**26**	1	0	0	0	0	0	0	0	148	35	38
18:00	1	0	9	27	49	15	0	0	0	0	0	0	0	0	101	34	38
19:00	0	1	5	21	27	3	0	0	0	0	0	0	0	0	57	33	35
20:00	1	0	3	19	14	3	0	0	0	0	0	0	0	0	40	33	36
21:00	0	1	3	10	4	3	**3**	0	0	0	0	0	0	0	24	39	43
22:00	0	0	3	7	2	4	0	0	0	0	0	0	0	0	16	37	39
23:00	0	0	2	1	2	0	3	0	0	0	0	0	0	0	8	43	44
Total	29	59	262	787	689	159	23	3	1	0	0	1	0	2	2015		
Percent	1.4%	2.9%	13.0%	39.1%	34.2%	7.9%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	08:00	09:00	09:00	08:00	08:00	07:00	07:00	08:00	09:00			10:00		09:00	08:00		
Vol.	4	7	30	76	54	19	5	1	1			1		1	179		
PM Peak	14:00	15:00	14:00	16:00	15:00	17:00	21:00	15:00						14:00	16:00		
Vol.	6	20	27	113	68	26	3	1						1	212		
Grand Total	70	122	540	1580	1359	316	51	6	1	0	0	2	1	4	4052		
Percent	1.7%	3.0%	13.3%	39.0%	33.5%	7.8%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			

15th Percentile :	23 MPH
50th Percentile :	29 MPH
85th Percentile :	34 MPH
95th Percentile :	37 MPH

Statistics

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	2939
Percent in Pace :	72.5%
Number of Vehicles > 40 MPH :	65
Percent of Vehicles > 40 MPH :	1.6%
Mean Speed(Average) :	29 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		85th	95th
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
04/05/22	0	0	1	1	4	0	0	0	0	0	0	0	0	0	6	33	34
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	19	19
04:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
05:00	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	43	44
06:00	0	0	0	2	8	7	1	**1**	0	0	0	0	0	0	19	39	45
07:00	0	0	3	12	30	13	1	1	0	0	0	0	0	0	60	37	39
08:00	**4**	7	**23**	**39**	**49**	**28**	**6**	0	0	0	0	0	0	0	**156**	36	39
09:00	0	1	16	32	27	10	0	0	0	0	0	0	0	0	86	34	37
10:00	3	**11**	19	24	29	5	0	0	0	0	0	0	0	0	91	33	35
11:00	4	11	23	34	26	11	1	1	0	0	0	0	0	0	111	34	38
12 PM	6	12	26	55	18	2	2	0	0	0	0	0	0	0	121	31	34
13:00	**13**	12	23	38	18	7	0	**1**	0	0	0	0	0	0	112	32	36
14:00	8	17	40	60	14	4	2	0	0	0	0	0	0	0	145	29	34
15:00	12	**25**	**43**	48	19	2	0	0	0	0	0	0	0	0	149	29	33
16:00	4	12	41	55	36	2	0	0	0	0	0	0	0	0	150	32	34
17:00	4	6	26	**64**	**51**	9	**4**	1	0	0	0	0	0	0	**165**	33	38
18:00	3	3	21	47	25	5	2	0	0	0	0	0	0	0	106	33	36
19:00	2	2	11	35	27	10	2	0	**1**	0	0	0	0	0	90	34	39
20:00	0	0	3	17	31	**13**	1	0	0	0	0	0	0	0	65	36	39
21:00	0	0	0	4	10	5	1	0	0	0	0	0	0	0	20	38	40
22:00	1	0	0	5	9	4	1	0	0	0	0	0	0	0	20	37	40
23:00	0	0	1	2	2	4	0	0	0	0	0	0	0	0	9	38	39
Total	65	120	320	574	436	141	25	5	1	0	0	0	0	0	1687		
Percent	3.9%	7.1%	19.0%	34.0%	25.8%	8.4%	1.5%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	10:00	08:00	08:00	08:00	08:00	08:00	06:00							08:00		
Vol.	4	11	23	39	49	28	6	1							156		
PM Peak	13:00	15:00	15:00	17:00	17:00	20:00	17:00	13:00	19:00						17:00		
Vol.	13	25	43	64	51	13	4	1	1						165		

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	1	2	0	1	0	0	0	0	0	0	0	4	42	44
01:00	0	0	0	1	0	2	0	0	0	0	0	0	0	0	3	38	39
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	19	19
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	2	0	0	0	1	0	0	0	**1**	0	0	0	0	0	4	52	53
06:00	0	0	0	2	10	6	1	0	0	0	0	0	0	0	19	38	40
07:00	0	0	0	9	27	14	**6**	**1**	1	0	0	0	0	0	58	39	44
08:00	8	**14**	21	**36**	**42**	**30**	5	1	0	0	0	0	0	0	**157**	37	39
09:00	**10**	9	18	19	13	10	1	0	0	0	0	0	0	0	80	34	38
10:00	1	4	20	30	22	7	3	0	0	0	0	0	0	0	87	34	39
11:00	1	5	**23**	29	20	6	0	0	0	0	0	0	0	0	84	33	36
12 PM	7	12	21	48	23	8	4	0	0	0	0	0	0	0	123	33	38
13:00	8	6	25	36	26	11	1	**1**	0	0	0	0	0	0	114	34	38
14:00	2	12	**35**	45	23	5	1	0	0	0	0	0	0	0	123	32	34
15:00	**17**	**13**	29	**57**	35	9	0	1	0	0	0	0	0	0	161	32	36
16:00	4	11	28	45	50	16	2	0	0	0	0	0	0	0	156	34	38
17:00	0	2	17	43	**70**	**30**	**7**	0	0	0	0	0	0	0	**169**	36	39
18:00	4	2	5	14	48	25	7	0	0	0	0	0	0	0	105	38	41
19:00	2	0	2	22	31	14	7	1	0	0	0	0	0	0	79	38	42
20:00	0	0	2	11	17	14	5	0	0	0	0	0	0	0	49	39	42
21:00	0	0	0	6	14	6	2	0	0	0	0	0	0	0	28	38	41
22:00	0	0	0	4	9	2	1	0	0	0	0	0	0	0	16	36	40
23:00	0	0	0	0	7	2	1	0	0	0	0	0	0	0	10	38	42
Total	66	91	246	459	490	217	55	5	2	0	0	0	0	0	1631		
Percent	4.0%	5.6%	15.1%	28.1%	30.0%	13.3%	3.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	08:00	11:00	08:00	08:00	08:00	07:00	07:00	05:00						08:00		
Vol.	10	14	23	36	42	30	6	1	1						157		
PM Peak	15:00	15:00	14:00	15:00	17:00	17:00	17:00	13:00							17:00		
Vol.	17	13	35	57	70	30	7	1							169		
Grand Total	131	211	566	1033	926	358	80	10	3	0	0	0	0	0	3318		
Percent	3.9%	6.4%	17.1%	31.1%	27.9%	10.8%	2.4%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

	15th Percentile :	21 MPH
	50th Percentile :	28 MPH
	85th Percentile :	34 MPH
	95th Percentile :	38 MPH

Statistics		
	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	1959
	Percent in Pace :	59.0%
	Number of Vehicles > 40 MPH :	93
	Percent of Vehicles > 40 MPH :	2.8%
	Mean Speed(Average) :	29 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound, Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	0	0	1	1	6	0	0	0	0	0	0	0	0	0	8	34	34
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	33	34
02:00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	4	33	34
03:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	33	34
04:00	0	0	1	1	3	1	0	0	0	0	0	0	0	0	6	35	38
05:00	2	0	1	6	8	4	1	0	0	0	0	0	0	0	22	37	39
06:00	0	0	3	11	19	10	2	**2**	0	0	0	0	0	0	47	38	44
07:00	0	0	15	54	106	29	**8**	1	0	0	0	0	0	0	213	36	39
08:00	**6**	9	38	**105**	**122**	**52**	7	0	0	0	0	**1**	0	0	**340**	35	39
09:00	0	2	23	91	80	25	2	0	0	0	0	0	0	0	223	34	38
10:00	4	**17**	42	82	65	8	0	0	0	0	0	0	**1**	0	219	33	34
11:00	6	14	**55**	87	54	17	2	1	0	0	0	0	0	0	236	33	37
12 PM	9	19	49	108	55	8	3	0	0	0	0	0	0	0	251	32	34
13:00	16	13	44	108	57	14	4	**1**	0	0	0	0	0	**1**	258	33	37
14:00	**20**	28	65	**130**	53	9	3	0	0	0	0	0	0	0	308	31	34
15:00	20	**42**	**79**	123	67	13	1	0	0	0	0	0	0	1	**346**	32	34
16:00	9	20	75	119	87	12	0	1	0	0	0	0	0	0	323	32	34
17:00	5	9	43	123	**110**	**31**	4	1	0	0	0	0	0	0	326	34	38
18:00	3	3	33	96	70	12	**6**	0	0	0	0	0	0	0	223	33	37
19:00	4	2	17	66	52	17	3	1	**1**	0	0	0	0	0	163	34	39
20:00	0	1	10	28	51	18	2	0	0	0	0	0	0	0	110	35	39
21:00	0	1	0	11	20	6	1	0	0	0	0	0	0	0	39	35	39
22:00	2	2	2	9	13	6	2	0	0	0	0	0	0	0	36	37	40
23:00	0	0	2	5	4	6	2	0	0	0	0	0	0	0	19	39	42
Total	106	183	598	1367	1106	298	53	8	1	0	0	1	1	2	3724		
Percent	2.8%	4.9%	16.1%	36.7%	29.7%	8.0%	1.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	08:00	10:00	11:00	08:00	08:00	08:00	07:00	06:00				08:00	10:00		08:00		
Vol.	6	17	55	105	122	52	8	2				1	1		340		
PM Peak	14:00	15:00	15:00	14:00	17:00	17:00	18:00	13:00	19:00					13:00	15:00		
Vol.	20	42	79	130	110	31	6	1	1					1	346		

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound, Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	1	2	0	1	0	0	0	0	0	0	0	4	42	44
01:00	0	0	0	1	0	2	1	0	0	0	0	0	0	0	4	42	44
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
03:00	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3	32	34
04:00	0	0	0	1	3	0	0	0	0	0	0	0	0	0	4	34	34
05:00	2	0	1	6	13	2	0	0	**1**	0	0	0	0	0	25	34	39
06:00	0	0	4	12	24	13	2	0	0	0	0	0	0	0	55	37	39
07:00	1	1	15	65	77	33	**11**	1	1	0	0	0	0	0	205	37	41
08:00	12	**18**	**49**	**112**	**96**	**41**	6	**2**	0	0	0	0	0	0	**336**	34	38
09:00	**13**	16	48	69	52	15	1	0	1	0	0	0	0	**1**	216	33	37
10:00	2	6	43	82	56	11	4	0	0	0	0	**1**	0	0	205	33	37
11:00	2	9	46	73	59	16	1	0	0	0	0	0	0	0	206	33	37
12 PM	8	20	37	101	68	18	6	0	0	0	0	0	0	0	258	33	38
13:00	8	9	46	106	74	20	1	1	0	0	0	0	0	0	265	33	37
14:00	8	18	**62**	102	73	13	3	0	0	0	0	0	0	**1**	280	33	35
15:00	**21**	**33**	56	125	103	20	1	**2**	0	0	0	0	0	0	361	33	36
16:00	10	13	40	**158**	118	25	3	1	0	0	0	0	0	0	**368**	33	37
17:00	0	2	27	88	**136**	**56**	**8**	0	0	0	0	0	0	0	317	36	39
18:00	5	2	14	41	97	40	7	0	0	0	0	0	0	0	206	37	39
19:00	2	1	7	43	58	17	7	1	0	0	0	0	0	0	136	36	40
20:00	1	0	5	30	31	17	5	0	0	0	0	0	0	0	89	37	40
21:00	0	1	3	16	18	9	5	0	0	0	0	0	0	0	52	38	42
22:00	0	0	3	11	11	6	1	0	0	0	0	0	0	0	32	36	39
23:00	0	0	2	1	9	2	4	0	0	0	0	0	0	0	18	41	43
Total	95	150	508	1246	1179	376	78	8	3	0	0	1	0	2	3646		
Percent	2.6%	4.1%	13.9%	34.2%	32.3%	10.3%	2.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	09:00	08:00	08:00	08:00	08:00	08:00	07:00	08:00	05:00			10:00		09:00	08:00		
Vol.	13	18	49	112	96	41	11	2	1			1		1	336		
PM Peak	15:00	15:00	14:00	16:00	17:00	17:00	17:00	15:00						14:00	16:00		
Vol.	21	33	62	158	136	56	8	2						1	368		
Grand Total	201	333	1106	2613	2285	674	131	16	4	0	0	2	1	4	7370		
Percent	2.7%	4.5%	15.0%	35.5%	31.0%	9.1%	1.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%			

15th Percentile :	22 MPH
50th Percentile :	28 MPH
85th Percentile :	34 MPH
95th Percentile :	38 MPH

Statistics

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	4898
Percent in Pace :	66.5%
Number of Vehicles > 40 MPH :	158
Percent of Vehicles > 40 MPH :	2.1%
Mean Speed(Average) :	29 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
05:00	1	14	5	0	0	0	0	0	0	0	0	0	0	0	20
06:00	0	22	5	0	1	0	0	0	0	0	0	0	0	0	28
07:00	1	126	23	1	2	0	0	0	0	0	0	0	0	0	153
08:00	1	157	21	0	3	1	0	0	0	0	0	0	0	1	184
09:00	0	112	20	0	5	0	0	0	0	0	0	0	0	0	137
10:00	0	99	21	1	6	0	0	1	0	0	0	0	0	0	128
11:00	0	99	24	0	2	0	0	0	0	0	0	0	0	0	125
12 PM	2	111	14	0	2	1	0	0	0	0	0	0	0	0	130
13:00	1	121	20	1	3	0	0	0	0	0	0	0	0	0	146
14:00	1	138	20	0	3	0	0	1	0	0	0	0	0	0	163
15:00	2	166	23	0	5	0	0	0	0	0	0	0	0	1	197
16:00	3	157	12	1	0	0	0	0	0	0	0	0	0	0	173
17:00	2	138	20	0	1	0	0	0	0	0	0	0	0	0	161
18:00	1	108	6	0	2	0	0	0	0	0	0	0	0	0	117
19:00	0	62	10	0	0	0	0	0	0	0	0	0	0	1	73
20:00	0	41	4	0	0	0	0	0	0	0	0	0	0	0	45
21:00	0	17	2	0	0	0	0	0	0	0	0	0	0	0	19
22:00	0	15	1	0	0	0	0	0	0	0	0	0	0	0	16
23:00	0	7	3	0	0	0	0	0	0	0	0	0	0	0	10
Total	15	1720	254	4	36	3	0	2	0	0	0	0	0	3	2037
Percent	0.7%	84.4%	12.5%	0.2%	1.8%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	05:00	08:00	11:00	07:00	10:00	02:00		10:00						08:00	
Vol.	1	157	24	1	6	1		1						1	
PM Peak	16:00	15:00	15:00	13:00	15:00	12:00		14:00						15:00	
Vol.	3	166	23	1	5	1		1						1	

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Belchertown, Massachusetts

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Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	20	1	0	0	0	0	0	0	0	0	0	0	0	21
06:00	0	31	4	0	1	0	0	0	0	0	0	0	0	0	36
07:00	0	131	11	1	4	0	0	0	0	0	0	0	0	0	147
08:00	3	159	15	1	1	0	0	0	0	0	0	0	0	0	179
09:00	0	120	11	1	4	0	0	0	0	0	0	0	0	0	136
10:00	1	96	19	0	2	0	0	0	0	0	0	0	0	0	118
11:00	0	100	18	0	3	1	0	0	0	0	0	0	0	0	122
12 PM	0	113	18	1	3	0	0	0	0	0	0	0	0	0	135
13:00	2	129	15	0	5	0	0	0	0	0	0	0	0	0	151
14:00	1	131	22	0	2	1	0	0	0	0	0	0	0	0	157
15:00	1	166	25	1	6	1	0	0	0	0	0	0	0	0	200
16:00	2	185	22	0	3	0	0	0	0	0	0	0	0	0	212
17:00	0	132	15	0	1	0	0	0	0	0	0	0	0	0	148
18:00	1	93	6	0	1	0	0	0	0	0	0	0	0	0	101
19:00	0	52	5	0	0	0	0	0	0	0	0	0	0	0	57
20:00	0	36	3	0	1	0	0	0	0	0	0	0	0	0	40
21:00	0	23	1	0	0	0	0	0	0	0	0	0	0	0	24
22:00	0	14	1	0	1	0	0	0	0	0	0	0	0	0	16
23:00	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
Total	11	1742	216	5	38	3	0	0	0	0	0	0	0	0	2015
Percent	0.5%	86.5%	10.7%	0.2%	1.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	10:00	07:00	07:00	11:00									
Vol.	3	159	19	1	4	1									
PM Peak	13:00	16:00	15:00	12:00	15:00	14:00									
Vol.	2	185	25	1	6	1									
Grand Total	26	3462	470	9	74	6	0	2	0	0	0	0	0	3	4052
Percent	0.6%	85.4%	11.6%	0.2%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	13	6	0	0	0	0	0	0	0	0	0	0	0	19
07:00	1	40	14	0	5	0	0	0	0	0	0	0	0	0	60
08:00	1	129	17	0	7	1	0	1	0	0	0	0	0	0	156
09:00	0	56	20	0	8	0	0	2	0	0	0	0	0	0	86
10:00	0	78	11	0	1	0	0	0	0	0	0	0	0	1	91
11:00	1	79	23	0	7	0	0	1	0	0	0	0	0	0	111
12 PM	1	99	17	0	4	0	0	0	0	0	0	0	0	0	121
13:00	5	87	15	0	4	1	0	0	0	0	0	0	0	0	112
14:00	2	116	23	1	1	0	1	0	0	0	0	0	0	1	145
15:00	3	123	17	0	5	0	0	0	0	0	0	0	0	1	149
16:00	0	122	21	0	6	0	0	1	0	0	0	0	0	0	150
17:00	1	142	20	0	1	0	1	0	0	0	0	0	0	0	165
18:00	0	86	17	0	3	0	0	0	0	0	0	0	0	0	106
19:00	1	72	13	1	3	0	0	0	0	0	0	0	0	0	90
20:00	0	55	9	0	1	0	0	0	0	0	0	0	0	0	65
21:00	0	15	4	0	1	0	0	0	0	0	0	0	0	0	20
22:00	0	19	1	0	0	0	0	0	0	0	0	0	0	0	20
23:00	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
Total	16	1352	248	2	57	2	2	5	0	0	0	0	0	3	1687
Percent	0.9%	80.1%	14.7%	0.1%	3.4%	0.1%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	07:00	08:00	11:00		09:00	08:00		09:00						10:00	
Vol.	1	129	23		8	1		2						1	
PM Peak	13:00	17:00	14:00	14:00	16:00	13:00	14:00	16:00						14:00	
Vol.	5	142	23	1	6	1	1	1						1	

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Location: Woodlawn Avenue
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City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	1	0	0	0	0	0	0	0	0	0	0	1	4
06:00	0	12	6	0	1	0	0	0	0	0	0	0	0	0	19
07:00	0	46	6	0	5	1	0	0	0	0	0	0	0	0	58
08:00	2	125	21	0	6	2	0	0	0	0	0	0	0	1	157
09:00	3	47	14	0	15	0	0	0	0	0	0	0	0	1	80
10:00	0	67	13	0	6	0	0	0	0	0	0	0	0	1	87
11:00	0	58	20	0	6	0	0	0	0	0	0	0	0	0	84
12 PM	2	94	23	0	2	0	0	1	0	0	0	0	0	1	123
13:00	1	92	14	0	5	0	0	0	0	0	0	0	0	2	114
14:00	1	99	19	1	3	0	0	0	0	0	0	0	0	0	123
15:00	2	118	25	0	12	0	0	0	0	0	0	0	0	4	161
16:00	0	129	19	0	7	0	0	0	0	0	0	0	0	1	156
17:00	0	143	20	0	6	0	0	0	0	0	0	0	0	0	169
18:00	2	79	19	0	5	0	0	0	0	0	0	0	0	0	105
19:00	1	65	10	0	3	0	0	0	0	0	0	0	0	0	79
20:00	0	42	7	0	0	0	0	0	0	0	0	0	0	0	49
21:00	0	24	2	0	2	0	0	0	0	0	0	0	0	0	28
22:00	0	15	1	0	0	0	0	0	0	0	0	0	0	0	16
23:00	0	9	1	0	0	0	0	0	0	0	0	0	0	0	10
Total	14	1273	243	1	84	3	0	1	0	0	0	0	0	12	1631
Percent	0.9%	78.1%	14.9%	0.1%	5.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	
AM Peak	09:00	08:00	08:00		09:00	08:00								05:00	
Vol.	3	125	21		15	2								1	
PM Peak	12:00	17:00	15:00	14:00	15:00			12:00						15:00	
Vol.	2	143	25	1	12			1						4	
Grand Total	30	2625	491	3	141	5	2	6	0	0	0	0	0	15	3318
Percent	0.9%	79.1%	14.8%	0.1%	4.2%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

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Location: Woodlawn Avenue
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City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	3	0	0	0	1	0	0	0	0	0	0	0	0	4
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
05:00	1	16	5	0	0	0	0	0	0	0	0	0	0	0	22
06:00	0	35	11	0	1	0	0	0	0	0	0	0	0	0	47
07:00	2	166	37	1	7	0	0	0	0	0	0	0	0	0	213
08:00	2	286	38	0	10	2	0	1	0	0	0	0	0	1	340
09:00	0	168	40	0	13	0	0	2	0	0	0	0	0	0	223
10:00	0	177	32	1	7	0	0	1	0	0	0	0	0	1	219
11:00	1	178	47	0	9	0	0	1	0	0	0	0	0	0	236
12 PM	3	210	31	0	6	1	0	0	0	0	0	0	0	0	251
13:00	6	208	35	1	7	1	0	0	0	0	0	0	0	0	258
14:00	3	254	43	1	4	0	1	1	0	0	0	0	0	1	308
15:00	5	289	40	0	10	0	0	0	0	0	0	0	0	2	346
16:00	3	279	33	1	6	0	0	1	0	0	0	0	0	0	323
17:00	3	280	40	0	2	0	1	0	0	0	0	0	0	0	326
18:00	1	194	23	0	5	0	0	0	0	0	0	0	0	0	223
19:00	1	134	23	1	3	0	0	0	0	0	0	0	0	1	163
20:00	0	96	13	0	1	0	0	0	0	0	0	0	0	0	110
21:00	0	32	6	0	1	0	0	0	0	0	0	0	0	0	39
22:00	0	34	2	0	0	0	0	0	0	0	0	0	0	0	36
23:00	0	16	3	0	0	0	0	0	0	0	0	0	0	0	19
Total	31	3072	502	6	93	5	2	7	0	0	0	0	0	6	3724
Percent	0.8%	82.5%	13.5%	0.2%	2.5%	0.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	07:00	08:00	11:00	07:00	09:00	08:00		09:00						08:00	
Vol.	2	286	47	1	13	2		2						1	
PM Peak	13:00	15:00	14:00	13:00	15:00	12:00	14:00	14:00						15:00	
Vol.	6	289	43	1	10	1	1	1						2	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Woodlawn Avenue
Location: East of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	22	2	0	0	0	0	0	0	0	0	0	0	1	25
06:00	0	43	10	0	2	0	0	0	0	0	0	0	0	0	55
07:00	0	177	17	1	9	1	0	0	0	0	0	0	0	0	205
08:00	5	284	36	1	7	2	0	0	0	0	0	0	0	1	336
09:00	3	167	25	1	19	0	0	0	0	0	0	0	0	1	216
10:00	1	163	32	0	8	0	0	0	0	0	0	0	0	1	205
11:00	0	158	38	0	9	1	0	0	0	0	0	0	0	0	206
12 PM	2	207	41	1	5	0	0	1	0	0	0	0	0	1	258
13:00	3	221	29	0	10	0	0	0	0	0	0	0	0	2	265
14:00	2	230	41	1	5	1	0	0	0	0	0	0	0	0	280
15:00	3	284	50	1	18	1	0	0	0	0	0	0	0	4	361
16:00	2	314	41	0	10	0	0	0	0	0	0	0	0	1	368
17:00	0	275	35	0	7	0	0	0	0	0	0	0	0	0	317
18:00	3	172	25	0	6	0	0	0	0	0	0	0	0	0	206
19:00	1	117	15	0	3	0	0	0	0	0	0	0	0	0	136
20:00	0	78	10	0	1	0	0	0	0	0	0	0	0	0	89
21:00	0	47	3	0	2	0	0	0	0	0	0	0	0	0	52
22:00	0	29	2	0	1	0	0	0	0	0	0	0	0	0	32
23:00	0	14	4	0	0	0	0	0	0	0	0	0	0	0	18
Total	25	3015	459	6	122	6	0	1	0	0	0	0	0	12	3646
Percent	0.7%	82.7%	12.6%	0.2%	3.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	
AM Peak	08:00	08:00	11:00	07:00	09:00	08:00								05:00	
Vol.	5	284	38	1	19	2								1	
PM Peak	13:00	16:00	15:00	12:00	15:00	14:00		12:00						15:00	
Vol.	3	314	50	1	18	1		1						4	
Grand Total	56	6087	961	12	215	11	2	8	0	0	0	0	0	18	7370
Percent	0.8%	82.6%	13.0%	0.2%	2.9%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street (Southbound)
Location: South of Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Start Time	Tue A.M.	05-Apr- P.M.		Wed A.M.	06-Apr- P.M.		Thu A.M.	07-Apr- P.M.		Daily Average A.M.	Daily Average P.M.
12:00	10	128		8	130		*	*		9	129
12:15	5	122		8	140		*	*		6	131
12:30	5	136		2	171		*	*		4	154
12:45	3	124		2	140		*	*		2	132
01:00	1	110		3	113		*	*		2	112
01:15	1	130		2	131		*	*		2	130
01:30	2	140		1	116		*	*		2	128
01:45	1	137		1	116		*	*		1	126
02:00	6	148		3	132		*	*		4	140
02:15	5	178		1	130		*	*		3	154
02:30	2	140		3	152		*	*		2	146
02:45	4	52		3	140		*	*		4	96
03:00	4	0		2	159		*	*		3	80
03:15	2	4		3	40		*	*		2	22
03:30	1	167		4	165		*	*		2	166
03:45	7	179		4	**173**		*	*		6	176
04:00	2	140		2	**174**		*	*		2	157
04:15	5	**156**		6	**153**		*	*		6	**154**
04:30	5	**168**		2	**176**		*	*		4	**172**
04:45	8	**178**		7	142		*	*		8	**160**
05:00	14	**170**		4	180		*	*		9	**175**
05:15	16	146		12	114		*	*		14	130
05:30	20	134		23	118		*	*		22	126
05:45	29	138		22	113		*	*		26	126
06:00	27	170		30	106		*	*		28	138
06:15	38	91		30	106		*	*		34	98
06:30	58	91		72	88		*	*		65	90
06:45	64	72		78	74		*	*		71	73
07:00	106	70		94	63		*	*		100	66
07:15	112	66		110	58		*	*		111	62
07:30	148	86		146	43		*	*		147	64
07:45	**196**	47		**176**	48		*	*		**186**	48
08:00	**203**	34		**191**	44		*	*		**197**	39
08:15	**173**	44		**152**	34		*	*		**162**	39
08:30	**152**	31		**152**	40		*	*		**152**	36
08:45	122	27		126	24		*	*		124	26
09:00	137	33		136	22		*	*		136	28
09:15	104	27		114	23		*	*		109	25
09:30	104	15		116	17		*	*		110	16
09:45	134	14		116	22		*	*		125	18
10:00	104	24		105	18		*	*		104	21
10:15	116	12		110	45		*	*		113	28
10:30	136	10		118	14		*	*		127	12
10:45	118	10		115	12		*	*		116	11
11:00	131	16		94	16		*	*		112	16
11:15	123	17		111	19		*	*		117	18
11:30	128	8		114	14		*	*		121	11
11:45	158	14		136	11		*	*		147	12
Total	3050	4154		2870	4279		0	0		2959	4217
Combined Total	7204			7149			0			7176	
Peak	07:45	04:15	-	07:45	03:45	-	-	-	-	07:45	04:15
Vol.	724	672	-	671	676	-	-	-	-	697	661
P.H.F.	0.892	0.944		0.878	0.960					0.885	0.944
ADT		ADT 7,173		AADT 7,173							

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street (Northbound)
Location: South of Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Start Time	Tue A.M.	05-Apr- P.M.		Wed A.M.	06-Apr- P.M.		Thu A.M.	07-Apr- P.M.		Daily Average A.M.	Daily Average P.M.
12:00	8	119		8	108		0	*		5	114
12:15	4	122		4	138		*	*		4	130
12:30	4	108		2	94		*	*		3	101
12:45	4	116		2	118		*	*		3	117
01:00	1	99		1	106		*	*		1	102
01:15	5	112		2	108		*	*		4	110
01:30	0	115		3	103		*	*		2	109
01:45	3	121		4	121		*	*		4	121
02:00	4	126		2	111		*	*		3	118
02:15	2	121		0	118		*	*		1	120
02:30	5	142		1	116		*	*		3	129
02:45	1	129		3	139		*	*		2	134
03:00	0	147		1	138		*	*		0	142
03:15	2	**154**		2	139		*	*		2	146
03:30	12	**130**		2	116		*	*		7	123
03:45	3	**156**		3	137		*	*		3	146
04:00	3	**154**		1	134		*	*		2	144
04:15	3	137		4	**146**		*	*		4	**142**
04:30	7	146		7	**124**		*	*		7	**135**
04:45	12	148		12	**129**		*	*		12	**138**
05:00	5	145		3	**164**		*	*		4	**154**
05:15	9	127		8	137		*	*		8	132
05:30	14	143		17	129		*	*		16	136
05:45	23	121		14	118		*	*		18	120
06:00	13	113		16	121		*	*		14	117
06:15	33	109		28	119		*	*		30	114
06:30	59	86		48	89		*	*		54	88
06:45	69	76		75	76		*	*		72	76
07:00	67	80		76	91		*	*		72	86
07:15	104	72		95	61		*	*		100	66
07:30	**126**	61		97	52		*	*		112	56
07:45	**145**	53		**115**	53		*	*		**130**	53
08:00	**125**	59		**119**	45		*	*		**122**	52
08:15	**121**	43		**128**	38		*	*		**124**	40
08:30	124	53		**111**	31		*	*		**118**	42
08:45	137	45		111	37		*	*		124	41
09:00	91	38		97	26		*	*		94	32
09:15	89	18		67	28		*	*		78	23
09:30	86	18		83	30		*	*		84	24
09:45	88	15		105	25		*	*		96	20
10:00	90	24		89	20		*	*		90	22
10:15	98	21		95	19		*	*		96	20
10:30	103	18		81	14		*	*		92	16
10:45	91	10		98	21		*	*		94	16
11:00	115	15		91	12		*	*		103	14
11:15	101	8		108	12		*	*		104	10
11:30	99	7		97	6		*	*		98	6
11:45	122	11		103	9		*	*		112	10
Total	2430	4191		2239	4026		0	0		2331	4107
Combined Total	6621			6265			0			6438	
Peak	07:30	03:15	-	07:45	04:15	-	-	-	-	07:45	04:15
Vol.	517	594	-	473	563	-	-	-	-	494	569
P.H.F.	0.891	0.952		0.924	0.858					0.950	0.924
ADT		ADT 6,440		AADT 6,440							

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street (Northbound)
Location: South of Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	1	4	3	3	5	4	0	0	0	0	0	0	0	0	20	36	38
01:00	1	1	1	0	5	1	0	0	0	0	0	0	0	0	9	34	37
02:00	0	3	3	2	2	1	0	0	**1**	0	0	0	0	0	12	35	51
03:00	0	0	5	11	1	0	0	0	0	0	0	0	0	0	17	29	30
04:00	0	1	3	7	7	6	1	0	0	0	0	0	0	0	25	37	39
05:00	0	2	3	9	26	7	3	0	1	0	0	0	0	0	51	37	42
06:00	2	13	11	38	64	**38**	**8**	0	0	0	0	0	0	0	174	37	39
07:00	7	59	68	136	**147**	23	2	0	0	0	0	0	0	0	442	33	35
08:00	**65**	**155**	**105**	94	67	20	1	0	0	0	0	0	0	0	**507**	30	34
09:00	12	72	59	127	69	14	1	0	0	0	0	0	0	0	354	32	34
10:00	6	70	65	128	94	18	1	0	0	0	0	0	0	0	382	32	34
11:00	18	86	82	**159**	80	11	1	0	0	0	0	0	0	0	437	31	34
12 PM	11	109	85	128	110	22	0	0	0	0	0	0	0	0	465	32	34
13:00	6	87	78	154	95	**26**	1	0	0	0	0	0	0	0	447	32	35
14:00	19	119	110	**174**	84	12	0	0	0	0	0	0	0	0	518	31	34
15:00	**88**	**137**	**141**	155	63	2	1	0	0	0	0	0	0	0	**587**	29	32
16:00	30	128	135	172	106	14	0	0	0	0	0	0	0	0	585	31	34
17:00	18	115	111	148	**117**	24	**3**	0	0	0	0	0	0	0	536	32	35
18:00	14	93	68	93	93	22	1	0	0	0	0	0	0	0	384	33	35
19:00	6	69	52	82	48	8	1	0	0	0	0	0	0	0	266	31	34
20:00	2	57	36	42	53	9	1	0	0	0	0	0	0	0	200	33	35
21:00	2	13	18	26	22	8	0	0	0	0	0	0	0	0	89	33	37
22:00	2	15	11	15	20	8	1	**1**	0	0	0	0	0	0	73	34	38
23:00	0	6	7	7	11	9	1	0	0	0	0	0	0	0	41	37	39
Total	310	1414	1260	1910	1389	307	28	1	2	0	0	0	0	0	6621		
Percent	4.7%	21.4%	19.0%	28.8%	21.0%	4.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	11:00	07:00	06:00	06:00		02:00						08:00		
Vol.	65	155	105	159	147	38	8		1						507		
PM Peak	15:00	15:00	15:00	14:00	17:00	13:00	17:00	22:00							15:00		
Vol.	88	137	141	174	117	26	3	1							587		

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street (Northbound)
Location: South of Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	1	1	5	2	5	1	1	0	0	0	0	0	0	0	16	34	40
01:00	0	1	1	3	2	3	0	0	0	0	0	0	0	0	10	37	39
02:00	0	0	2	1	0	3	0	0	0	0	0	0	0	0	6	38	39
03:00	0	0	0	4	2	2	0	0	0	0	0	0	0	0	8	37	38
04:00	0	0	3	3	6	9	3	0	0	0	0	0	0	0	24	39	43
05:00	0	1	4	16	15	5	1	0	0	0	0	0	0	0	42	34	38
06:00	2	13	16	26	69	**34**	**5**	**1**	**1**	0	0	0	0	0	167	37	39
07:00	2	59	47	116	**124**	32	2	1	0	0	0	0	0	0	383	34	37
08:00	**67**	**134**	**119**	91	48	9	1	0	0	0	0	0	0	0	**469**	29	33
09:00	19	70	62	115	75	10	1	0	0	0	0	0	0	0	352	32	34
10:00	10	54	71	120	95	13	0	0	0	0	0	0	0	0	363	32	34
11:00	5	84	65	**135**	93	15	2	0	0	0	0	0	0	0	399	32	34
12 PM	14	96	91	155	98	4	0	0	0	0	0	0	0	0	458	31	34
13:00	12	100	94	140	84	8	0	0	0	0	0	0	0	0	438	31	34
14:00	21	114	101	136	100	11	1	0	0	0	0	0	0	0	484	31	34
15:00	**69**	**140**	122	114	71	14	0	0	0	0	0	0	0	0	530	30	34
16:00	39	129	**150**	156	59	0	0	0	0	0	0	0	0	0	533	29	32
17:00	21	139	108	**165**	100	15	0	0	0	0	0	0	0	0	**548**	31	34
18:00	6	89	69	109	**104**	**25**	**2**	**1**	0	0	0	0	0	0	405	33	36
19:00	8	51	53	83	53	8	1	0	0	0	0	0	0	0	257	32	34
20:00	2	37	29	39	37	6	1	0	0	0	0	0	0	0	151	32	34
21:00	0	21	15	27	34	12	0	0	0	0	0	0	0	0	109	34	37
22:00	0	15	11	13	30	5	0	0	0	0	0	0	0	0	74	33	36
23:00	0	5	7	10	15	0	2	0	0	0	0	0	0	0	39	33	40
Total	298	1353	1245	1779	1319	244	23	3	1	0	0	0	0	0	6265		
Percent	4.8%	21.6%	19.9%	28.4%	21.1%	3.9%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	11:00	07:00	06:00	06:00	06:00	06:00						08:00		
Vol.	67	134	119	135	124	34	5	1	1						469		
PM Peak	15:00	15:00	16:00	17:00	18:00	18:00	18:00	18:00							17:00		
Vol.	69	140	150	165	104	25	2	1							548		
Grand Total	608	2767	2505	3689	2708	551	51	4	3	0	0	0	0	0	12886		
Percent	4.7%	21.5%	19.4%	28.6%	21.0%	4.3%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	17 MPH
50th Percentile :	25 MPH
85th Percentile :	32 MPH
95th Percentile :	34 MPH

Statistics

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	6397
Percent in Pace :	49.6%
Number of Vehicles > 40 MPH :	58
Percent of Vehicles > 40 MPH :	0.5%
Mean Speed(Average) :	25 MPH

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street (Northbound)
Location: South of Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	1	15	1	0	1	0	0	2	0	0	0	0	0	0	20
01:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	10	1	0	0	0	0	0	1	0	0	0	0	0	12
03:00	0	8	4	0	3	0	0	1	0	1	0	0	0	0	17
04:00	0	17	6	0	2	0	0	0	0	0	0	0	0	0	25
05:00	0	41	7	1	2	0	0	0	0	0	0	0	0	0	51
06:00	0	139	28	1	4	1	0	0	1	0	0	0	0	0	174
07:00	0	360	63	7	8	2	0	0	1	0	0	0	0	1	442
08:00	3	415	52	5	12	0	0	3	1	0	0	0	1	15	507
09:00	3	268	56	5	18	1	0	1	1	0	0	0	0	1	354
10:00	0	317	48	2	10	0	1	2	2	0	0	0	0	0	382
11:00	2	348	61	4	17	0	0	1	2	0	0	0	0	2	437
12 PM	5	369	66	5	13	1	0	3	0	0	0	0	0	3	465
13:00	5	350	64	8	17	0	0	0	1	0	0	0	0	2	447
14:00	1	420	72	2	13	0	0	2	3	0	0	0	0	5	518
15:00	5	469	78	4	9	2	0	2	1	0	0	0	0	17	587
16:00	4	496	65	2	12	1	0	1	1	0	0	1	0	2	585
17:00	4	470	49	1	9	0	0	0	1	0	0	0	0	2	536
18:00	0	336	34	3	7	1	0	0	0	0	0	0	0	3	384
19:00	1	238	18	3	4	0	0	0	0	0	0	0	0	2	266
20:00	1	178	17	1	3	0	0	0	0	0	0	0	0	0	200
21:00	0	78	10	0	0	0	0	0	1	0	0	0	0	0	89
22:00	0	67	3	1	0	0	0	1	1	0	0	0	0	0	73
23:00	1	36	2	0	1	0	0	1	0	0	0	0	0	0	41
Total	36	5453	806	55	165	9	1	20	18	1	0	1	1	55	6621
Percent	0.5%	82.4%	12.2%	0.8%	2.5%	0.1%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.8%	
AM Peak	08:00	08:00	07:00	07:00	09:00	07:00	10:00	08:00	10:00	03:00			08:00	08:00	
Vol.	3	415	63	7	18	2	1	3	2	1			1	15	
PM Peak	12:00	16:00	15:00	13:00	13:00	15:00		12:00	14:00			16:00		15:00	
Vol.	5	496	78	8	17	2		3	3			1		17	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street (Northbound)
Location: South of Elm Street
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	14	2	0	0	0	0	0	0	0	0	0	0	0	16
01:00	0	8	0	0	2	0	0	0	0	0	0	0	0	0	10
02:00	0	5	0	0	0	0	0	0	1	0	0	0	0	0	6
03:00	0	6	1	0	0	0	0	0	1	0	0	0	0	0	8
04:00	0	18	6	0	0	0	0	0	0	0	0	0	0	0	24
05:00	0	32	7	1	2	0	0	0	0	0	0	0	0	0	42
06:00	0	129	31	2	4	0	0	0	0	0	0	0	0	1	167
07:00	0	318	44	5	9	1	0	3	0	0	0	0	0	3	383
08:00	1	401	47	3	8	1	0	0	0	0	1	0	0	7	469
09:00	0	264	58	1	22	3	1	1	0	0	0	0	0	2	352
10:00	0	282	58	3	14	3	0	2	1	0	0	0	0	0	363
11:00	1	295	79	3	13	4	0	1	2	0	0	0	0	1	399
12 PM	2	370	57	8	13	1	0	2	2	0	0	0	0	3	458
13:00	0	372	51	4	8	0	0	1	1	0	0	0	0	1	438
14:00	0	414	49	5	10	2	0	2	1	0	0	0	0	1	484
15:00	0	452	58	4	8	1	0	0	0	0	0	0	0	7	530
16:00	1	471	55	2	2	0	0	1	0	0	0	0	0	1	533
17:00	3	485	48	2	9	0	0	0	0	0	0	0	0	1	548
18:00	0	356	39	2	7	0	0	0	0	0	0	0	0	1	405
19:00	0	227	23	3	4	0	0	0	0	0	0	0	0	0	257
20:00	0	136	11	1	1	1	0	0	0	0	0	0	0	1	151
21:00	0	97	9	0	1	1	0	1	0	0	0	0	0	0	109
22:00	0	65	7	0	2	0	0	0	0	0	0	0	0	0	74
23:00	0	32	4	0	2	0	0	1	0	0	0	0	0	0	39
Total	8	5249	744	49	141	18	1	15	9	0	1	0	0	30	6265
Percent	0.1%	83.8%	11.9%	0.8%	2.3%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.5%	
AM Peak	08:00	08:00	11:00	07:00	09:00	11:00	09:00	07:00	11:00		08:00			08:00	
Vol.	1	401	79	5	22	4	1	3	2		1			7	
PM Peak	17:00	17:00	15:00	12:00	12:00	14:00		12:00	12:00					15:00	
Vol.	3	485	58	8	13	2		2	2					7	
Grand Total	44	10702	1550	104	306	27	2	35	27	1	1	1	1	85	12886
Percent	0.3%	83.1%	12.0%	0.8%	2.4%	0.2%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.7%	

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Start Time	05-Apr-22 Tue	Northbound A.M.	Northbound P.M.	Southbound A.M.	Southbound P.M.	Combined A.M.	Combined P.M.	06-Apr- Wed	Northbound A.M.	Northbound P.M.	Southbound A.M.	Southbound P.M.	Combined A.M.	Combined P.M.
12:00		4	76	9	84	13	160		6	50	8	90	14	140
12:15		4	68	4	86	8	154		3	87	6	82	9	169
12:30		2	76	4	95	6	171		1	52	2	126	3	178
12:45		2	74	3	93	5	167		1	69	0	93	1	162
01:00		1	59	1	66	2	125		1	65	4	81	5	146
01:15		4	73	1	96	5	169		3	61	2	89	5	150
01:30		0	78	2	94	2	172		2	67	1	72	3	139
01:45		3	83	1	77	4	160		3	69	1	67	4	136
02:00		5	83	5	80	10	163		2	78	3	86	5	164
02:15		2	67	4	***132***	6	199		0	64	1	89	1	153
02:30		5	85	2	***93***	7	178		1	71	2	87	3	158
02:45		0	67	3	***110***	3	177		6	***77***	3	93	9	***170***
03:00		0	***85***	4	***102***	4	***187***		1	***93***	1	109	2	***202***
03:15		1	***86***	2	132	3	***218***		2	***73***	3	***120***	5	***193***
03:30		10	***91***	1	92	11	***183***		1	***96***	2	***128***	3	***224***
03:45		3	***83***	5	107	8	***190***		3	73	2	***96***	5	169
04:00		4	79	2	98	6	177		0	39	1	***148***	1	187
04:15		2	64	3	105	5	169		2	38	3	120	5	158
04:30		3	89	3	105	6	194		6	72	1	103	7	175
04:45		12	75	5	111	17	186		10	61	4	95	14	156
05:00		5	71	11	99	16	170		2	81	1	108	3	189
05:15		7	77	8	70	15	147		6	63	7	62	13	125
05:30		13	80	12	76	25	156		13	72	11	60	24	132
05:45		20	61	18	75	38	136		11	70	14	62	25	132
06:00		10	62	22	75	32	137		12	58	19	53	31	111
06:15		24	59	21	52	45	111		25	63	15	69	40	132
06:30		45	46	40	55	85	101		38	42	41	43	79	85
06:45		50	40	38	33	88	73		52	43	47	44	99	87
07:00		53	39	61	42	114	81		48	49	52	38	100	87
07:15		***73***	33	66	42	139	75		***68***	26	62	38	130	64
07:30		***91***	26	104	48	***195***	74		***54***	23	80	21	134	44
07:45		***100***	34	105	22	***205***	56		***78***	31	103	40	181	71
08:00		***73***	30	***116***	22	***189***	52		***67***	18	***110***	29	***177***	47
08:15		62	20	***131***	23	***193***	43		59	18	***100***	25	***159***	43
08:30		61	27	***118***	20	179	47		58	19	***101***	19	***159***	38
08:45		85	26	***136***	17	221	43		75	24	***126***	12	***201***	36
09:00		58	26	89	20	147	46		62	18	85	9	147	27
09:15		57	10	67	18	124	28		44	16	75	18	119	34
09:30		61	13	68	12	129	25		53	17	80	14	133	31
09:45		54	12	92	11	146	23		71	14	79	12	150	26
10:00		56	10	68	15	124	25		53	15	61	13	114	28
10:15		59	7	68	10	127	17		60	13	65	21	125	34
10:30		69	14	74	7	143	21		56	5	83	8	139	13
10:45		57	8	81	10	138	18		63	12	81	11	144	23
11:00		63	11	80	12	143	23		53	7	63	11	116	18
11:15		58	6	90	14	148	20		65	11	77	13	142	24
11:30		60	3	76	8	136	11		63	2	68	12	131	14
11:45		84	5	104	11	188	16		71	7	78	11	149	18
Total		1575	2397	2028	2877	3603	5274		1434	2192	1834	2850	3268	5042
Day Total		3972		4905		8877			3626		4684		8310	
% Total		17.7%	27.0%	22.8%	32.4%				17.3%	26.4%	22.1%	34.3%		
Peak	-	07:15	03:00	08:00	02:15	07:30	03:00	-	07:15	02:45	08:00	03:15	08:00	02:45
Vol.	-	337	345	501	437	782	778	-	267	339	437	492	696	789
P.H.F.		0.843	0.948	0.921	0.828	0.954	0.892		0.856	0.883	0.867	0.831	0.866	0.881

ADT	ADT 8,590	AADT 8,590

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	0	1	1	0	2	4	4	0	0	0	0	0	0	0	12	42	44
01:00	0	1	1	0	0	6	0	0	0	0	0	0	0	0	8	39	39
02:00	0	2	3	1	2	3	0	0	0	**1**	0	0	0	0	12	38	56
03:00	0	1	4	7	1	1	0	0	0	0	0	0	0	0	14	29	36
04:00	0	0	0	2	7	9	3	0	0	0	0	0	0	0	21	39	43
05:00	0	0	1	5	14	16	7	1	**1**	0	0	0	0	0	45	41	44
06:00	0	2	0	4	22	64	31	**5**	1	0	0	0	0	0	129	42	44
07:00	0	0	1	2	125	**150**	**35**	3	0	0	0	0	0	1	**317**	39	43
08:00	4	2	**6**	31	107	101	28	2	0	0	0	0	0	0	281	39	42
09:00	4	0	3	29	122	61	9	1	1	0	0	0	0	0	230	38	39
10:00	5	1	5	**37**	113	69	9	1	0	0	0	**1**	0	0	241	38	39
11:00	**10**	**3**	2	35	**127**	71	12	1	0	0	0	0	0	**4**	265	38	39
12 PM	3	2	7	34	**151**	87	8	2	0	0	0	0	0	0	294	38	39
13:00	6	6	6	38	129	93	15	0	0	0	0	0	0	0	293	38	40
14:00	5	1	5	50	147	89	5	0	0	0	0	0	0	0	302	37	39
15:00	**15**	**7**	**25**	**59**	140	83	12	1	0	0	0	0	0	**3**	**345**	37	39
16:00	9	0	6	21	149	**108**	14	0	0	0	0	0	0	0	307	38	39
17:00	4	1	1	26	132	103	**18**	**3**	0	0	0	0	0	1	289	38	41
18:00	2	0	1	14	94	85	10	0	0	0	0	**1**	0	0	207	38	40
19:00	1	0	0	16	61	46	8	0	0	0	0	0	0	0	132	38	40
20:00	0	0	0	4	39	52	6	1	**1**	0	0	0	0	0	103	39	42
21:00	0	0	0	6	34	16	4	1	0	0	0	0	0	0	61	38	42
22:00	0	1	0	2	9	21	3	3	0	0	0	0	0	0	39	40	46
23:00	1	1	0	3	7	8	5	0	0	0	0	0	0	0	25	41	43
Total	69	32	78	426	1734	1346	246	25	4	1	0	2	0	9	3972		
Percent	1.7%	0.8%	2.0%	10.7%	43.7%	33.9%	6.2%	0.6%	0.1%	0.0%	0.0%	0.1%	0.0%	0.2%			
AM Peak	11:00	11:00	08:00	10:00	11:00	07:00	07:00	06:00	05:00	02:00		10:00		11:00	07:00		
Vol.	10	3	6	37	127	150	35	5	1	1		1		4	317		
PM Peak	15:00	15:00	15:00	15:00	12:00	16:00	17:00	17:00	20:00			18:00		15:00	15:00		
Vol.	15	7	25	59	151	108	18	3	1			1		3	345		

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	3	2	4	1	1	0	0	0	0	0	0	11	41	47
01:00	0	0	1	2	2	3	1	0	0	0	0	0	0	0	9	39	42
02:00	0	0	1	0	3	4	1	0	0	0	0	0	0	0	9	39	42
03:00	0	0	1	1	1	3	1	0	0	0	0	0	0	0	7	39	43
04:00	0	0	0	0	5	7	6	0	0	0	0	0	0	0	18	42	44
05:00	0	0	0	1	15	14	1	1	0	0	0	0	0	0	32	39	42
06:00	0	0	0	3	23	70	**25**	**5**	**1**	0	0	0	0	0	127	42	44
07:00	2	0	1	18	107	**94**	20	5	0	0	0	0	**1**	0	248	39	43
08:00	3	**3**	**6**	**53**	115	66	9	1	0	**1**	0	0	0	**2**	**259**	37	39
09:00	3	2	5	46	113	50	10	1	0	0	0	0	0	0	230	37	39
10:00	4	0	1	23	**132**	61	8	1	0	0	0	0	0	2	232	37	39
11:00	**6**	0	3	22	131	67	22	1	0	0	0	0	0	0	252	38	42
12 PM	**9**	0	7	39	130	66	6	1	0	0	0	0	0	0	258	37	39
13:00	3	1	9	34	135	71	9	0	0	0	0	0	0	0	262	37	39
14:00	4	3	11	35	**141**	82	13	1	0	0	0	0	0	0	290	38	39
15:00	7	4	**13**	**79**	132	85	12	2	0	0	0	0	0	**1**	**335**	37	39
16:00	1	2	1	18	134	50	3	0	0	0	0	0	0	1	210	37	39
17:00	6	**5**	2	20	137	**99**	14	1	0	0	0	0	**1**	1	286	38	40
18:00	3	0	0	6	81	94	**18**	**3**	0	0	0	0	1	0	206	39	43
19:00	1	1	1	9	51	53	13	0	0	0	0	0	0	0	129	39	42
20:00	0	0	0	6	37	25	10	1	0	0	0	0	0	0	79	39	43
21:00	0	0	0	2	22	33	7	0	**1**	0	0	0	0	0	65	39	43
22:00	0	0	0	2	16	23	3	0	0	**1**	0	0	0	0	45	39	42
23:00	0	0	0	2	12	10	2	1	0	0	0	0	0	0	27	39	44
Total	52	21	63	424	1677	1134	215	26	2	2	0	0	3	7	3626		
Percent	1.4%	0.6%	1.7%	11.7%	46.2%	31.3%	5.9%	0.7%	0.1%	0.1%	0.0%	0.0%	0.1%	0.2%			
AM Peak	11:00	08:00	08:00	08:00	10:00	07:00	06:00	06:00	06:00	08:00			07:00	08:00	08:00		
Vol.	6	3	6	53	132	94	25	5	1	1			1	2	259		
PM Peak	12:00	17:00	15:00	15:00	14:00	17:00	18:00	18:00	21:00	22:00			17:00	15:00	15:00		
Vol.	9	5	13	79	141	99	18	3	1	1			1	1	335		
Grand Total	121	53	141	850	3411	2480	461	51	6	3	0	2	3	16	7598		
Percent	1.6%	0.7%	1.9%	11.2%	44.9%	32.6%	6.1%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%			

15th Percentile :	29 MPH
50th Percentile :	33 MPH
85th Percentile :	38 MPH
95th Percentile :	41 MPH

Statistics

10 MPH Pace Speed :	31-40 MPH
Number in Pace :	5891
Percent in Pace :	77.5%
Number of Vehicles > 40 MPH :	542
Percent of Vehicles > 40 MPH :	7.1%
Mean Speed(Average) :	34 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	0	0	0	3	4	8	2	3	0	0	0	0	0	0	20	45	48
01:00	0	1	1	0	1	2	0	0	0	0	0	0	0	0	5	38	39
02:00	0	0	4	4	1	5	0	0	0	0	0	0	0	0	14	37	39
03:00	0	0	0	3	5	4	0	0	0	0	0	0	0	0	12	37	39
04:00	0	0	0	3	1	5	3	1	0	0	0	0	0	0	13	43	46
05:00	0	0	2	5	16	18	7	1	0	0	0	0	0	0	49	40	43
06:00	2	0	0	1	20	69	26	3	0	0	0	0	0	0	121	42	44
07:00	0	0	1	31	97	162	**39**	**5**	**1**	0	0	0	0	0	336	39	43
08:00	**5**	**6**	**21**	**68**	**181**	**194**	26	0	0	0	0	0	0	0	**501**	38	40
09:00	0	0	3	31	132	120	28	2	0	0	0	0	0	0	316	39	42
10:00	2	0	5	32	157	75	17	3	0	0	0	0	0	0	291	38	41
11:00	0	0	5	40	172	111	22	0	0	0	0	0	0	0	350	38	41
12 PM	0	1	8	41	180	109	15	4	0	0	0	0	0	0	358	38	40
13:00	0	0	6	40	160	110	16	0	**1**	0	0	0	0	0	333	38	40
14:00	1	0	10	77	**186**	125	14	1	1	0	0	0	0	0	415	38	39
15:00	**15**	**13**	**46**	**79**	151	105	24	0	0	0	0	0	0	0	**433**	38	40
16:00	2	3	8	62	165	**148**	**28**	3	0	0	0	0	0	0	419	38	41
17:00	0	0	7	26	137	121	23	**6**	0	0	0	0	0	0	320	39	42
18:00	0	1	0	18	72	108	15	1	0	0	0	0	0	0	215	39	41
19:00	1	0	1	12	63	52	25	0	0	0	0	0	0	0	154	40	43
20:00	1	1	0	4	41	25	8	2	0	0	0	0	0	0	82	39	43
21:00	0	0	0	8	15	20	15	3	0	0	0	0	0	0	61	42	44
22:00	0	0	0	4	17	16	5	0	0	0	0	0	0	0	42	39	42
23:00	0	0	0	1	13	22	6	3	0	0	0	0	0	0	45	41	46
Total	29	26	128	593	1987	1734	364	41	3	0	0	0	0	0	4905		
Percent	0.6%	0.5%	2.6%	12.1%	40.5%	35.4%	7.4%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	07:00						08:00		
Vol.	5	6	21	68	181	194	39	5	1						501		
PM Peak	15:00	15:00	15:00	15:00	14:00	16:00	16:00	17:00	13:00						15:00		
Vol.	15	13	46	79	186	148	28	6	1						433		

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	1	6	4	5	0	0	0	0	0	0	0	16	42	44
01:00	0	0	0	1	3	4	0	0	0	0	0	0	0	0	8	38	39
02:00	0	0	0	1	4	3	0	1	0	0	0	0	0	0	9	39	47
03:00	0	0	0	0	4	4	0	0	0	0	0	0	0	0	8	38	39
04:00	0	0	0	0	3	6	0	0	0	0	0	0	0	0	9	38	39
05:00	0	0	0	2	7	17	7	0	0	0	0	0	0	0	33	41	43
06:00	2	0	0	2	29	63	21	5	0	0	0	0	0	0	122	41	44
07:00	0	0	2	25	100	**133**	**29**	**6**	**1**	**1**	0	0	0	0	297	39	43
08:00	**21**	**13**	**25**	**53**	171	131	20	3	0	0	0	0	0	0	**437**	38	40
09:00	0	0	3	32	**172**	93	18	1	0	0	0	0	0	0	319	38	40
10:00	0	0	9	35	141	92	12	1	0	0	0	0	0	0	290	38	39
11:00	0	6	12	26	123	99	15	5	0	0	0	0	0	0	286	38	41
12 PM	1	1	12	**73**	163	115	21	4	1	0	0	0	0	0	391	38	41
13:00	0	2	8	33	142	112	12	0	0	0	0	0	0	0	309	38	39
14:00	0	0	3	20	168	**141**	19	3	1	0	0	0	0	0	355	38	41
15:00	**20**	**19**	**40**	67	152	124	27	4	0	0	0	0	0	0	453	38	41
16:00	0	1	0	26	**275**	127	33	4	0	0	0	0	0	0	**466**	38	42
17:00	0	3	4	11	95	131	**41**	**7**	0	0	0	0	0	0	292	40	44
18:00	1	0	0	5	51	111	38	1	**2**	0	0	0	0	0	209	41	44
19:00	2	0	1	4	40	57	28	2	1	0	**2**	0	0	0	137	42	44
20:00	0	0	0	9	30	36	8	2	0	0	0	0	0	0	85	39	43
21:00	1	0	0	1	17	25	7	2	0	0	0	0	0	0	53	40	44
22:00	0	0	0	7	19	21	4	2	0	0	0	0	0	0	53	39	44
23:00	0	0	0	0	11	21	11	4	0	0	0	0	0	0	47	43	47
Total	48	45	119	434	1926	1670	376	57	6	1	2	0	0	0	4684		
Percent	1.0%	1.0%	2.5%	9.3%	41.1%	35.7%	8.0%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	09:00	07:00	07:00	07:00	07:00	07:00					08:00		
Vol.	21	13	25	53	172	133	29	6	1	1					437		
PM Peak	15:00	15:00	15:00	12:00	16:00	14:00	17:00	17:00	18:00		19:00				16:00		
Vol.	20	19	40	73	275	141	41	7	2		2				466		
Grand Total	77	71	247	1027	3913	3404	740	98	9	1	2	0	0	0	9589		
Percent	0.8%	0.7%	2.6%	10.7%	40.8%	35.5%	7.7%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 30 MPH
50th Percentile : 34 MPH
85th Percentile : 39 MPH
95th Percentile : 42 MPH

Statistics

10 MPH Pace Speed : 31-40 MPH
Number in Pace : 7317
Percent in Pace : 76.3%
Number of Vehicles > 40 MPH : 850
Percent of Vehicles > 40 MPH : 8.9%
Mean Speed(Average) : 35 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound, Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	0	1	1	3	6	12	6	3	0	0	0	0	0	0	32	43	47
01:00	0	2	2	0	1	8	0	0	0	0	0	0	0	0	13	38	39
02:00	0	2	7	5	3	8	0	0	0	**1**	0	0	0	0	26	38	39
03:00	0	1	4	10	6	5	0	0	0	0	0	0	0	0	26	36	38
04:00	0	0	0	5	8	14	6	1	0	0	0	0	0	0	34	41	44
05:00	0	0	3	10	30	34	14	2	**1**	0	0	0	0	0	94	41	44
06:00	2	2	0	5	42	133	57	**8**	1	0	0	0	0	0	250	42	44
07:00	0	0	2	33	222	**312**	**74**	8	1	0	0	0	0	1	653	39	43
08:00	9	**8**	**27**	**99**	288	295	54	2	0	0	0	0	0	0	**782**	38	41
09:00	4	0	6	60	254	181	37	3	1	0	0	0	0	0	546	38	41
10:00	7	1	10	69	270	144	26	4	0	0	0	**1**	0	0	532	38	40
11:00	**10**	3	7	75	**299**	182	34	1	0	0	0	0	0	**4**	615	38	40
12 PM	3	3	15	75	331	196	23	6	0	0	0	0	0	0	652	38	39
13:00	6	6	12	78	289	203	31	0	**1**	0	0	0	0	0	626	38	40
14:00	6	1	15	127	**333**	214	19	1	1	0	0	0	0	0	717	37	39
15:00	**30**	**20**	**71**	**138**	291	188	36	1	0	0	0	0	0	**3**	**778**	37	39
16:00	11	3	14	83	314	**256**	**42**	3	0	0	0	0	0	0	726	38	41
17:00	4	1	8	52	269	224	41	**9**	0	0	0	0	0	1	609	39	42
18:00	2	1	1	32	166	193	25	1	0	0	0	**1**	0	0	422	39	41
19:00	2	0	1	28	124	98	33	0	0	0	0	0	0	0	286	39	42
20:00	1	1	0	8	80	77	14	3	1	0	0	0	0	0	185	39	43
21:00	0	0	0	14	49	36	19	4	0	0	0	0	0	0	122	41	44
22:00	0	1	0	6	26	37	8	3	0	0	0	0	0	0	81	39	44
23:00	1	1	0	4	20	30	11	3	0	0	0	0	0	0	70	41	44
Total	98	58	206	1019	3721	3080	610	66	7	1	0	2	0	9	8877		
Percent	1.1%	0.7%	2.3%	11.5%	41.9%	34.7%	6.9%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	11:00	08:00	08:00	08:00	11:00	07:00	07:00	06:00	05:00	02:00		10:00		11:00	08:00		
Vol.	10	8	27	99	299	312	74	8	1	1		1		4	782		
PM Peak	15:00	15:00	15:00	15:00	14:00	16:00	16:00	17:00	13:00			18:00		15:00	15:00		
Vol.	30	20	71	138	333	256	42	9	1			1		3	778		

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound, Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	4	8	8	6	1	0	0	0	0	0	0	27	42	44
01:00	0	0	1	3	5	7	1	0	0	0	0	0	0	0	17	38	40
02:00	0	0	1	1	7	7	1	1	0	0	0	0	0	0	18	39	45
03:00	0	0	1	1	5	7	1	0	0	0	0	0	0	0	15	39	41
04:00	0	0	0	0	8	13	6	0	0	0	0	0	0	0	27	41	43
05:00	0	0	0	3	22	31	8	1	0	0	0	0	0	0	65	39	43
06:00	2	0	0	5	52	133	46	10	**1**	0	0	0	0	0	249	42	44
07:00	2	0	3	43	207	**227**	**49**	**11**	1	**1**	0	0	**1**	0	545	39	43
08:00	**24**	**16**	**31**	**106**	**286**	197	29	4	0	1	0	0	0	**2**	**696**	38	39
09:00	3	2	8	78	285	143	28	2	0	0	0	0	0	0	549	38	40
10:00	4	0	10	58	273	153	20	2	0	0	0	0	0	2	522	38	39
11:00	6	6	15	48	254	166	37	6	0	0	0	0	0	0	538	38	42
12 PM	10	1	19	112	293	181	27	5	1	0	0	0	0	0	649	38	40
13:00	3	3	17	67	277	183	21	0	0	0	0	0	0	0	571	38	39
14:00	4	3	14	55	309	223	32	4	1	0	0	0	0	0	645	38	40
15:00	**27**	**23**	**53**	**146**	284	209	39	6	0	0	0	0	0	**1**	**788**	38	40
16:00	1	3	1	44	**409**	177	36	4	0	0	0	0	0	1	676	38	40
17:00	6	8	6	31	232	**230**	55	**8**	0	0	0	0	**1**	1	578	39	43
18:00	4	0	0	11	132	205	**56**	4	**2**	0	0	0	1	0	415	40	43
19:00	3	1	2	13	91	110	41	2	1	0	**2**	0	0	0	266	40	43
20:00	0	0	0	15	67	61	18	3	0	0	0	0	0	0	164	39	43
21:00	1	0	0	3	39	58	14	2	1	0	0	0	0	0	118	39	43
22:00	0	0	0	9	35	44	7	2	0	**1**	0	0	0	0	98	39	43
23:00	0	0	0	2	23	31	13	5	0	0	0	0	0	0	74	42	46
Total	100	66	182	858	3603	2804	591	83	8	3	2	0	3	7	8310		
Percent	1.2%	0.8%	2.2%	10.3%	43.4%	33.7%	7.1%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	08:00	08:00	08:00	08:00	08:00	07:00	07:00	07:00	06:00	07:00			07:00	08:00	08:00		
Vol.	24	16	31	106	286	227	49	11	1	1			1	2	696		
PM Peak	15:00	15:00	15:00	15:00	16:00	17:00	18:00	17:00	18:00	22:00	19:00		17:00	15:00	15:00		
Vol.	27	23	53	146	409	230	56	8	2	1	2		1	1	788		
Grand Total	198	124	388	1877	7324	5884	1201	149	15	4	2	2	3	16	17187		
Percent	1.2%	0.7%	2.3%	10.9%	42.6%	34.2%	7.0%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%			

	15th Percentile :	29 MPH
	50th Percentile :	34 MPH
	85th Percentile :	38 MPH
	95th Percentile :	42 MPH

Statistics		
	10 MPH Pace Speed :	31-40 MPH
	Number in Pace :	13208
	Percent in Pace :	76.8%
	Number of Vehicles > 40 MPH :	1392
	Percent of Vehicles > 40 MPH :	8.1%
	Mean Speed(Average) :	34 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	1	8	0	0	1	0	0	2	0	0	0	0	0	0	12
01:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
02:00	0	10	1	0	0	0	0	0	1	0	0	0	0	0	12
03:00	0	6	3	0	3	0	0	1	0	1	0	0	0	0	14
04:00	0	14	6	0	1	0	0	0	0	0	0	0	0	0	21
05:00	0	36	6	1	2	0	0	0	0	0	0	0	0	0	45
06:00	0	107	17	0	3	1	0	0	1	0	0	0	0	0	129
07:00	0	256	45	6	9	0	0	0	1	0	0	0	0	0	317
08:00	3	233	33	2	8	0	0	1	1	0	0	0	0	0	281
09:00	3	174	29	5	18	1	0	0	0	0	0	0	0	0	230
10:00	4	188	35	2	8	0	0	1	2	0	0	0	0	1	241
11:00	5	207	35	3	8	2	1	1	2	0	0	0	0	1	265
12 PM	7	231	34	5	12	1	0	3	0	0	0	0	0	1	294
13:00	5	220	44	7	14	2	0	0	1	0	0	0	0	0	293
14:00	2	239	43	2	10	2	0	2	1	0	0	0	0	1	302
15:00	10	281	41	2	8	0	0	2	0	0	0	0	0	1	345
16:00	5	260	31	2	7	1	0	0	1	0	0	0	0	0	307
17:00	1	252	25	1	7	2	0	0	1	0	0	0	0	0	289
18:00	0	189	12	2	3	0	0	0	0	0	0	0	0	1	207
19:00	0	118	9	3	2	0	0	0	0	0	0	0	0	0	132
20:00	0	92	8	1	2	0	0	0	0	0	0	0	0	0	103
21:00	0	57	3	0	0	0	0	0	1	0	0	0	0	0	61
22:00	1	34	2	1	0	0	0	1	0	0	0	0	0	0	39
23:00	2	18	2	0	1	0	0	1	0	0	0	0	0	1	25
Total	49	3237	465	45	127	12	1	15	13	1	0	0	0	7	3972
Percent	1.2%	81.5%	11.7%	1.1%	3.2%	0.3%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	11:00	07:00	07:00	07:00	09:00	11:00	11:00	00:00	10:00	03:00				10:00	
Vol.	5	256	45	6	18	2	1	2	2	1				1	
PM Peak	15:00	15:00	13:00	13:00	13:00	13:00		12:00	13:00					12:00	
Vol.	10	281	44	7	14	2		3	1					1	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
01:00	0	6	0	0	2	1	0	0	0	0	0	0	0	0	9
02:00	0	6	0	0	2	0	0	0	1	0	0	0	0	0	9
03:00	0	6	0	0	0	0	0	0	1	0	0	0	0	0	7
04:00	0	13	5	0	0	0	0	0	0	0	0	0	0	0	18
05:00	0	22	7	1	2	0	0	0	0	0	0	0	0	0	32
06:00	0	105	18	2	2	0	0	0	0	0	0	0	0	0	127
07:00	2	202	30	3	8	0	0	2	0	0	0	0	0	1	248
08:00	1	223	22	3	5	4	0	0	0	0	0	0	0	1	259
09:00	1	165	41	2	14	4	1	0	1	0	0	0	0	1	230
10:00	0	177	38	2	9	2	0	1	1	0	0	0	0	2	232
11:00	1	176	54	2	12	4	0	0	2	0	0	0	0	1	252
12 PM	3	202	32	6	11	0	0	1	2	0	0	0	0	1	258
13:00	2	209	38	3	7	0	0	2	1	0	0	0	0	0	262
14:00	4	237	34	4	8	0	0	1	1	0	0	0	0	1	290
15:00	4	272	44	5	7	3	0	0	0	0	0	0	0	0	335
16:00	0	183	21	2	3	0	0	1	0	0	0	0	0	0	210
17:00	4	245	25	2	8	0	0	1	0	0	0	0	0	1	286
18:00	1	179	16	3	6	1	0	0	0	0	0	0	0	0	206
19:00	0	108	13	3	4	1	0	0	0	0	0	0	0	0	129
20:00	0	71	6	1	1	0	0	0	0	0	0	0	0	0	79
21:00	0	59	5	0	1	0	0	0	0	0	0	0	0	0	65
22:00	0	38	4	0	2	0	0	1	0	0	0	0	0	0	45
23:00	0	22	2	0	2	0	0	1	0	0	0	0	0	0	27
Total	23	2936	456	44	116	20	1	11	10	0	0	0	0	9	3626
Percent	0.6%	81.0%	12.6%	1.2%	3.2%	0.6%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	07:00	08:00	11:00	07:00	09:00	08:00	09:00	07:00	11:00					10:00	
Vol.	2	223	54	3	14	4	1	2	2					2	
PM Peak	14:00	15:00	15:00	12:00	12:00	15:00		13:00	12:00					12:00	
Vol.	4	272	44	6	11	3		2	2					1	
Grand Total	72	6173	921	89	243	32	2	26	23	1	0	0	0	16	7598
Percent	0.9%	81.2%	12.1%	1.2%	3.2%	0.4%	0.0%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.2%	

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	15	2	1	1	0	0	1	0	0	0	0	0	0	20
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	10	2	0	0	0	0	0	2	0	0	0	0	0	14
03:00	0	12	0	0	0	0	0	0	0	0	0	0	0	0	12
04:00	0	9	3	0	1	0	0	0	0	0	0	0	0	0	13
05:00	0	29	13	1	6	0	0	0	0	0	0	0	0	0	49
06:00	1	79	21	3	17	0	0	0	0	0	0	0	0	0	121
07:00	0	241	58	8	26	0	0	3	0	0	0	0	0	0	336
08:00	1	374	90	5	26	2	0	3	0	0	0	0	0	0	501
09:00	1	238	40	7	27	2	0	1	0	0	0	0	0	0	316
10:00	1	212	45	2	23	4	0	1	2	0	0	0	0	1	291
11:00	2	263	55	3	20	3	1	2	1	0	0	0	0	0	350
12 PM	1	271	57	5	21	1	0	1	1	0	0	0	0	0	358
13:00	4	238	64	4	19	1	0	1	2	0	0	0	0	0	333
14:00	2	316	57	4	28	3	0	4	1	0	0	0	0	0	415
15:00	4	349	51	4	20	1	1	1	1	0	0	0	0	1	433
16:00	4	349	35	3	25	1	0	2	0	0	0	0	0	0	419
17:00	2	270	35	1	11	0	0	0	1	0	0	0	0	0	320
18:00	3	180	24	1	7	0	0	0	0	0	0	0	0	0	215
19:00	1	132	17	2	2	0	0	0	0	0	0	0	0	0	154
20:00	0	74	5	1	2	0	0	0	0	0	0	0	0	0	82
21:00	0	55	4	1	1	0	0	0	0	0	0	0	0	0	61
22:00	0	35	5	2	0	0	0	0	0	0	0	0	0	0	42
23:00	0	37	6	0	2	0	0	0	0	0	0	0	0	0	45
Total	27	3793	689	58	285	18	2	20	11	0	0	0	0	2	4905
Percent	0.6%	77.3%	14.0%	1.2%	5.8%	0.4%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	08:00	07:00	09:00	10:00	11:00	07:00	02:00					10:00	
Vol.	2	374	90	8	27	4	1	3	2					1	
PM Peak	13:00	15:00	13:00	12:00	14:00	14:00	15:00	14:00	13:00					15:00	
Vol.	4	349	64	5	28	3	1	4	2					1	

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	12	3	0	0	1	0	0	0	0	0	0	0	0	16
01:00	0	7	0	0	1	0	0	0	0	0	0	0	0	0	8
02:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	6	1	0	0	0	0	0	1	0	0	0	0	0	8
04:00	0	6	3	0	0	0	0	0	0	0	0	0	0	0	9
05:00	0	19	7	1	5	0	0	1	0	0	0	0	0	0	33
06:00	1	85	24	4	8	0	0	0	0	0	0	0	0	0	122
07:00	2	219	46	7	19	1	0	2	1	0	0	0	0	0	297
08:00	3	330	70	4	25	3	0	0	0	0	0	0	0	2	437
09:00	1	244	49	0	23	1	0	0	1	0	0	0	0	0	319
10:00	0	207	46	5	28	2	1	1	0	0	0	0	0	0	290
11:00	2	213	46	5	15	1	0	4	0	0	0	0	0	0	286
12 PM	2	294	61	5	25	1	0	2	1	0	0	0	0	0	391
13:00	1	221	58	5	21	1	0	2	0	0	0	0	0	0	309
14:00	0	268	51	6	25	3	0	2	0	0	0	0	0	0	355
15:00	9	350	72	3	13	2	0	2	1	0	0	0	0	1	453
16:00	1	394	55	2	13	0	0	1	0	0	0	0	0	0	466
17:00	2	232	46	1	11	0	0	0	0	0	0	0	0	0	292
18:00	2	172	25	2	7	0	0	0	0	1	0	0	0	0	209
19:00	1	108	21	1	6	0	0	0	0	0	0	0	0	0	137
20:00	0	74	5	1	5	0	0	0	0	0	0	0	0	0	85
21:00	1	43	6	0	3	0	0	0	0	0	0	0	0	0	53
22:00	0	42	6	1	3	0	0	0	1	0	0	0	0	0	53
23:00	0	41	4	0	2	0	0	0	0	0	0	0	0	0	47
Total	28	3594	707	53	258	16	1	17	6	1	0	0	0	3	4684
Percent	0.6%	76.7%	15.1%	1.1%	5.5%	0.3%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	08:00	08:00	08:00	07:00	10:00	08:00	10:00	11:00	03:00					08:00	
Vol.	3	330	70	7	28	3	1	4	1					2	
PM Peak	15:00	16:00	15:00	14:00	12:00	14:00		12:00	12:00	18:00				15:00	
Vol.	9	394	72	6	25	3		2	1	1				1	
Grand Total	55	7387	1396	111	543	34	3	37	17	1	0	0	0	5	9589
Percent	0.6%	77.0%	14.6%	1.2%	5.7%	0.4%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	1	23	2	1	2	0	0	3	0	0	0	0	0	0	32
01:00	0	12	1	0	0	0	0	0	0	0	0	0	0	0	13
02:00	0	20	3	0	0	0	0	0	3	0	0	0	0	0	26
03:00	0	18	3	0	3	0	0	1	0	1	0	0	0	0	26
04:00	0	23	9	0	2	0	0	0	0	0	0	0	0	0	34
05:00	0	65	19	2	8	0	0	0	0	0	0	0	0	0	94
06:00	1	186	38	3	20	1	0	0	1	0	0	0	0	0	250
07:00	0	497	103	14	35	0	0	3	1	0	0	0	0	0	653
08:00	4	607	123	7	34	2	0	4	1	0	0	0	0	0	782
09:00	4	412	69	12	45	3	0	1	0	0	0	0	0	0	546
10:00	5	400	80	4	31	4	0	2	4	0	0	0	0	2	532
11:00	7	470	90	6	28	5	2	3	3	0	0	0	0	1	615
12 PM	8	502	91	10	33	2	0	4	1	0	0	0	0	1	652
13:00	9	458	108	11	33	3	0	1	3	0	0	0	0	0	626
14:00	4	555	100	6	38	5	0	6	2	0	0	0	0	1	717
15:00	14	630	92	6	28	1	1	3	1	0	0	0	0	2	778
16:00	9	609	66	5	32	2	0	2	1	0	0	0	0	0	726
17:00	3	522	60	2	18	2	0	0	2	0	0	0	0	0	609
18:00	3	369	36	3	10	0	0	0	0	0	0	0	0	1	422
19:00	1	250	26	5	4	0	0	0	0	0	0	0	0	0	286
20:00	0	166	13	2	4	0	0	0	0	0	0	0	0	0	185
21:00	0	112	7	1	1	0	0	0	1	0	0	0	0	0	122
22:00	1	69	7	3	0	0	0	1	0	0	0	0	0	0	81
23:00	2	55	8	0	3	0	0	1	0	0	0	0	0	1	70
Total	76	7030	1154	103	412	30	3	35	24	1	0	0	0	9	8877
Percent	0.9%	79.2%	13.0%	1.2%	4.6%	0.3%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	11:00	08:00	08:00	07:00	09:00	11:00	11:00	08:00	10:00	03:00				10:00	
Vol.	7	607	123	14	45	5	2	4	4	1				2	
PM Peak	15:00	15:00	13:00	13:00	14:00	14:00	15:00	14:00	13:00					15:00	
Vol.	14	630	108	11	38	5	1	6	3					2	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: North Elm Street
Location: North of Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Northbound, Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	22	4	0	0	1	0	0	0	0	0	0	0	0	27
01:00	0	13	0	0	3	1	0	0	0	0	0	0	0	0	17
02:00	0	13	2	0	2	0	0	0	1	0	0	0	0	0	18
03:00	0	12	1	0	0	0	0	0	2	0	0	0	0	0	15
04:00	0	19	8	0	0	0	0	0	0	0	0	0	0	0	27
05:00	0	41	14	2	7	0	0	1	0	0	0	0	0	0	65
06:00	1	190	42	6	10	0	0	0	0	0	0	0	0	0	249
07:00	4	421	76	10	27	1	0	4	1	0	0	0	0	1	545
08:00	4	553	92	7	30	7	0	0	0	0	0	0	0	3	696
09:00	2	409	90	2	37	5	1	0	2	0	0	0	0	1	549
10:00	0	384	84	7	37	4	1	2	1	0	0	0	0	2	522
11:00	3	389	100	7	27	5	0	4	2	0	0	0	0	1	538
12 PM	5	496	93	11	36	1	0	3	3	0	0	0	0	1	649
13:00	3	430	96	8	28	1	0	4	1	0	0	0	0	0	571
14:00	4	505	85	10	33	3	0	3	1	0	0	0	0	1	645
15:00	13	622	116	8	20	5	0	2	1	0	0	0	0	1	788
16:00	1	577	76	4	16	0	0	2	0	0	0	0	0	0	676
17:00	6	477	71	3	19	0	0	1	0	0	0	0	0	1	578
18:00	3	351	41	5	13	1	0	0	0	1	0	0	0	0	415
19:00	1	216	34	4	10	1	0	0	0	0	0	0	0	0	266
20:00	0	145	11	2	6	0	0	0	0	0	0	0	0	0	164
21:00	1	102	11	0	4	0	0	0	0	0	0	0	0	0	118
22:00	0	80	10	1	5	0	0	1	1	0	0	0	0	0	98
23:00	0	63	6	0	4	0	0	1	0	0	0	0	0	0	74
Total	51	6530	1163	97	374	36	2	28	16	1	0	0	0	12	8310
Percent	0.6%	78.6%	14.0%	1.2%	4.5%	0.4%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	07:00	08:00	11:00	07:00	09:00	08:00	09:00	07:00	03:00					08:00	
Vol.	4	553	100	10	37	7	1	4	2					3	
PM Peak	15:00	15:00	15:00	12:00	12:00	15:00		13:00	12:00	18:00				12:00	
Vol.	13	622	116	11	36	5		4	3	1				1	
Grand Total	127	13560	2317	200	786	66	5	63	40	2	0	0	0	21	17187
Percent	0.7%	78.9%	13.5%	1.2%	4.6%	0.4%	0.0%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.1%	

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Start Time	05-Apr-22 Tue	Westbound A.M.	Westbound P.M.	Eastbound A.M.	Eastbound P.M.	Combined A.M.	Combined P.M.	06-Apr- Wed	Westbound A.M.	Westbound P.M.	Eastbound A.M.	Eastbound P.M.	Combined A.M.	Combined P.M.
12:00		4	52	1	54	5	106		1	48	1	44	2	92
12:15		1	54	1	31	2	85		1	51	0	53	1	104
12:30		2	48	0	49	2	97		1	55	1	43	2	98
12:45		2	42	0	37	2	79		1	44	1	44	2	88
01:00		0	46	0	48	0	94		0	46	2	48	2	94
01:15		1	51	0	43	1	94		0	55	0	43	0	98
01:30		0	54	0	57	0	111		0	41	0	54	0	95
01:45		0	45	0	63	0	108		1	59	0	48	1	107
02:00		0	50	0	64	0	114		0	37	0	47	0	84
02:15		0	67	1	56	1	123		0	62	0	52	0	114
02:30		0	54	0	51	0	105		0	50	1	49	1	99
02:45		1	73	0	52	1	125		0	60	3	56	3	116
03:00		0	67	0	66	0	133		0	50	1	67	1	117
03:15		0	75	0	55	0	130		0	55	0	59	0	114
03:30		1	***89***	0	53	1	142		1	75	2	51	3	126
03:45		2	***87***	3	63	5	150		0	78	1	66	1	144
04:00		0	***79***	0	50	0	129		1	71	1	55	2	126
04:15		1	***87***	3	70	4	***157***		2	77	3	***61***	5	138
04:30		3	73	1	73	4	***146***		1	64	2	***76***	3	***140***
04:45		2	81	4	70	6	***151***		4	***75***	4	***66***	8	***141***
05:00		0	86	4	74	4	***160***		1	***103***	3	***77***	4	***180***
05:15		1	74	9	***76***	10	150		3	***87***	10	61	13	***148***
05:30		2	63	9	***56***	11	119		5	***71***	10	59	15	130
05:45		5	74	14	***81***	19	155		3	52	8	54	11	106
06:00		7	58	5	***83***	12	141		6	53	13	48	19	101
06:15		10	57	17	55	27	112		5	66	22	52	27	118
06:30		21	41	31	42	52	83		14	48	31	38	45	86
06:45		26	43	32	34	58	77		32	30	42	29	74	59
07:00		20	46	48	35	68	81		32	46	45	32	77	78
07:15		39	36	***68***	27	107	63		28	38	56	23	84	61
07:30		41	38	***57***	36	98	74		31	27	62	22	93	49
07:45		60	23	***105***	26	165	49		47	25	***91***	13	***138***	38
08:00		***54***	33	***80***	19	***134***	52		***56***	29	***89***	15	***145***	44
08:15		***58***	26	56	18	***114***	44		***72***	24	***62***	9	***134***	33
08:30		***60***	23	62	14	***122***	37		***54***	17	***72***	12	***126***	29
08:45		***86***	24	82	12	***168***	36		***64***	15	70	11	134	26
09:00		34	19	43	17	77	36		47	14	37	19	84	33
09:15		39	10	42	9	81	19		22	15	51	7	73	22
09:30		33	7	42	5	75	12		37	12	42	2	79	14
09:45		43	9	52	5	95	14		43	12	40	14	83	26
10:00		34	11	41	11	75	22		28	10	41	7	69	17
10:15		28	14	49	3	77	17		38	7	39	23	77	30
10:30		42	5	44	4	86	9		29	8	37	6	66	14
10:45		42	4	42	1	84	5		41	10	37	3	78	13
11:00		42	7	36	3	78	10		42	4	36	5	78	9
11:15		46	5	35	5	81	10		47	3	40	3	87	6
11:30		38	4	42	1	80	5		32	4	42	3	74	7
11:45		51	8	50	2	101	10		38	4	53	2	91	6
Total		982	2122	1211	1859	2193	3981		911	1987	1204	1731	2115	3718
Day Total		3104		3070		6174			2898		2935		5833	
% Total		15.9%	34.4%	19.6%	30.1%				15.6%	34.1%	20.6%	29.7%		
Peak	-	08:00	03:30	07:15	05:15	08:00	04:15	-	08:00	04:45	07:45	04:15	07:45	04:30
Vol.	-	258	342	310	296	538	614	-	246	336	314	280	543	609
P.H.F.		0.750	0.961	0.738	0.892	0.801	0.959		0.854	0.816	0.863	0.909	0.936	0.846

ADT	ADT 6,003	AADT 6,003

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	0	0	2	5	2	0	0	0	0	0	0	0	0	0	9	31	33
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
03:00	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3	32	34
04:00	0	0	0	1	4	1	0	0	0	0	0	0	0	0	6	35	38
05:00	0	0	1	2	5	0	0	0	0	0	0	0	0	0	8	33	34
06:00	1	1	7	23	26	4	2	0	0	0	0	0	0	0	64	34	38
07:00	3	1	12	81	48	10	**3**	**1**	0	0	0	0	0	1	160	33	38
08:00	5	**4**	**50**	**125**	66	5	0	1	0	0	**1**	0	0	1	**258**	32	34
09:00	**7**	2	16	67	47	10	0	0	0	0	0	0	0	0	149	33	36
10:00	1	0	7	58	63	**14**	3	0	0	0	0	0	0	0	146	34	38
11:00	1	0	12	67	**81**	13	1	0	0	0	0	0	0	**2**	177	34	37
12 PM	3	0	10	87	80	13	**3**	0	0	0	0	0	0	0	196	34	37
13:00	6	1	11	91	75	9	3	0	0	0	0	0	0	0	196	33	36
14:00	7	2	14	104	96	17	2	0	0	0	0	0	0	**2**	244	34	37
15:00	**26**	**9**	**51**	127	90	13	1	0	0	0	0	0	0	1	318	33	34
16:00	12	7	34	**153**	98	15	0	0	0	**1**	0	0	0	0	**320**	33	35
17:00	7	5	16	120	**125**	**20**	2	0	0	0	**1**	0	0	1	297	34	37
18:00	8	0	18	85	78	9	0	0	0	0	0	0	0	1	199	33	34
19:00	4	0	22	80	35	2	0	0	0	0	0	0	0	0	143	32	34
20:00	1	0	5	63	32	5	0	0	0	0	0	0	0	0	106	33	34
21:00	1	1	1	26	14	2	0	0	0	0	0	0	0	0	45	33	34
22:00	0	0	3	16	13	1	1	0	0	0	0	0	0	0	34	33	36
23:00	0	0	3	9	10	1	1	0	0	0	0	0	0	0	24	34	39
Total	93	33	295	1394	1089	164	22	2	0	1	2	0	0	9	3104		
Percent	3.0%	1.1%	9.5%	44.9%	35.1%	5.3%	0.7%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.3%			
AM Peak	09:00	08:00	08:00	08:00	11:00	10:00	07:00	07:00			08:00			11:00	08:00		
Vol.	7	4	50	125	81	14	3	1			1			2	258		
PM Peak	15:00	15:00	15:00	16:00	17:00	17:00	12:00			16:00	17:00			14:00	16:00		
Vol.	26	9	51	153	125	20	3			1	1			2	320		

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	3	0	1	0	0	0	0	0	0	0	0	4	37	38
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
04:00	0	0	0	2	5	1	0	0	0	0	0	0	0	0	8	34	37
05:00	0	0	0	3	8	1	0	0	0	0	0	0	0	0	12	34	36
06:00	2	2	3	21	24	4	**1**	0	0	0	0	0	0	0	57	34	37
07:00	8	3	6	49	57	**14**	0	0	0	0	0	0	0	1	138	34	37
08:00	**11**	**4**	**38**	**119**	63	10	0	**1**	0	0	0	0	0	0	**246**	32	34
09:00	3	2	17	65	54	5	0	0	0	0	0	0	0	**3**	149	33	34
10:00	0	1	14	57	53	10	0	0	0	0	0	0	0	1	136	34	36
11:00	2	1	14	59	**77**	6	0	0	0	0	0	0	0	0	159	33	34
12 PM	4	0	11	88	83	9	1	**1**	0	0	0	0	0	**1**	198	33	35
13:00	5	2	13	84	83	12	1	0	0	0	0	0	0	1	201	33	36
14:00	11	0	19	88	74	**15**	1	0	0	0	0	0	0	1	209	33	36
15:00	**20**	**7**	**43**	111	60	14	1	0	0	0	0	**1**	**1**	0	258	33	36
16:00	13	1	22	139	**99**	10	**2**	0	0	0	0	0	0	1	287	33	34
17:00	9	2	31	**155**	99	15	1	0	**1**	0	0	0	0	0	**313**	33	35
18:00	4	1	12	84	86	10	0	0	0	0	0	0	0	0	197	33	35
19:00	0	3	16	56	54	5	2	0	0	0	0	0	0	0	136	33	35
20:00	2	0	9	39	30	4	1	0	0	0	0	0	0	0	85	33	35
21:00	2	0	2	30	17	2	0	0	0	0	0	0	0	0	53	33	34
22:00	0	2	6	15	9	3	0	0	0	0	0	0	0	0	35	33	37
23:00	0	0	3	5	5	2	0	0	0	0	0	0	0	0	15	34	38
Total	96	31	279	1272	1042	153	11	2	1	0	0	1	1	9	2898		
Percent	3.3%	1.1%	9.6%	43.9%	36.0%	5.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%			
AM Peak	08:00	08:00	08:00	08:00	11:00	07:00	06:00	08:00						09:00	08:00		
Vol.	11	4	38	119	77	14	1	1						3	246		
PM Peak	15:00	15:00	15:00	17:00	16:00	14:00	16:00	12:00	17:00			15:00	15:00	12:00	17:00		
Vol.	20	7	43	155	99	15	2	1	1			1	1	1	313		
Grand Total	189	64	574	2666	2131	317	33	4	1	1	2	1	1	18	6002		
Percent	3.1%	1.1%	9.6%	44.4%	35.5%	5.3%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%			

15th Percentile : 25 MPH
50th Percentile : 29 MPH
85th Percentile : 33 MPH
95th Percentile : 35 MPH

Statistics

10 MPH Pace Speed : 26-35 MPH
Number in Pace : 4797
Percent in Pace : 79.9%
Number of Vehicles > 40 MPH : 61
Percent of Vehicles > 40 MPH : 1.0%
Mean Speed(Average) : 29 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/05/22	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	33	34
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
03:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	37	39
04:00	0	0	0	2	4	2	0	0	0	0	0	0	0	0	8	37	39
05:00	0	0	2	13	11	8	1	1	0	0	0	0	0	0	36	37	41
06:00	0	1	6	24	37	14	1	**2**	0	0	0	0	0	0	85	36	39
07:00	0	1	21	84	**107**	**57**	**8**	0	0	0	0	0	0	0	278	37	39
08:00	**12**	**9**	**36**	**90**	83	42	7	1	0	0	0	0	0	0	**280**	35	39
09:00	1	3	15	60	74	20	5	1	0	0	0	0	0	0	179	34	39
10:00	0	4	17	62	66	21	6	0	0	0	0	0	0	0	176	35	39
11:00	0	0	9	38	69	38	8	1	0	0	0	0	0	0	163	37	40
12 PM	0	0	6	62	72	24	**7**	0	0	0	0	0	0	0	171	36	39
13:00	0	1	21	71	86	29	3	0	0	0	0	0	0	0	211	35	38
14:00	0	0	21	78	89	28	6	**1**	0	0	0	0	0	0	223	35	39
15:00	**6**	8	**52**	96	58	15	2	0	0	0	0	0	0	0	237	33	36
16:00	0	0	10	101	**115**	**33**	4	0	0	0	0	0	0	0	263	34	38
17:00	2	**10**	18	**112**	112	30	3	0	0	0	0	0	0	0	**287**	34	38
18:00	1	0	17	72	88	33	3	0	0	0	0	0	0	0	214	35	38
19:00	0	1	16	57	33	16	1	0	0	0	0	0	0	0	124	34	38
20:00	0	1	6	20	25	10	1	0	0	0	0	0	0	0	63	35	38
21:00	0	0	3	15	11	6	0	1	0	0	0	0	0	0	36	36	39
22:00	0	0	2	6	6	4	1	0	0	0	0	0	0	0	19	37	40
23:00	0	0	2	3	1	2	2	0	**1**	0	0	0	0	0	11	43	52
Total	22	39	280	1069	1149	433	69	8	1	0	0	0	0	0	3070		
Percent	0.7%	1.3%	9.1%	34.8%	37.4%	14.1%	2.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	07:00	06:00							08:00		
Vol.	12	9	36	90	107	57	8	2							280		
PM Peak	15:00	17:00	15:00	17:00	16:00	16:00	12:00	14:00	23:00						17:00		
Vol.	6	10	52	112	115	33	7	1	1						287		

Innovative Data, LLC

P.O. Pox 468
Belchertown, Massachusetts
InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	38	39
01:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	38	39
02:00	0	0	0	0	2	1	1	0	0	0	0	0	0	0	4	42	43
03:00	0	0	0	0	3	0	1	0	0	0	0	0	0	0	4	42	43
04:00	0	0	1	4	2	3	0	0	0	0	0	0	0	0	10	37	39
05:00	0	0	3	12	10	4	2	0	0	0	0	0	0	0	31	36	41
06:00	0	0	5	32	45	23	2	**1**	0	0	0	0	0	0	108	37	39
07:00	0	0	10	90	**103**	**44**	**6**	1	0	0	0	0	0	0	254	36	39
08:00	**13**	**20**	**44**	**99**	100	15	2	0	0	0	0	0	0	0	**293**	33	35
09:00	0	6	9	70	61	20	4	0	0	0	0	0	0	0	170	34	38
10:00	0	1	8	51	67	26	1	0	0	0	0	0	0	0	154	35	38
11:00	0	0	15	73	59	19	4	1	0	0	0	0	0	0	171	34	39
12 PM	0	1	12	68	71	29	1	**2**	0	0	0	0	0	0	184	35	38
13:00	0	1	22	66	75	28	1	0	0	0	0	0	0	0	193	35	38
14:00	0	0	30	85	65	21	3	0	0	0	0	0	0	0	204	34	38
15:00	**25**	**26**	**53**	85	38	11	**5**	0	0	0	0	0	0	0	243	32	36
16:00	0	8	22	**109**	90	25	4	0	0	0	0	0	0	0	**258**	34	38
17:00	0	1	17	89	**104**	**35**	5	0	0	0	0	0	0	0	251	35	38
18:00	0	0	13	58	77	16	3	0	0	0	0	0	0	0	167	34	38
19:00	1	0	7	28	31	21	2	0	0	0	0	0	0	0	90	37	39
20:00	0	0	5	15	20	4	2	1	0	0	0	0	0	0	47	34	41
21:00	0	0	4	11	13	9	3	2	0	0	0	0	0	0	42	39	44
22:00	0	0	3	13	16	7	0	0	0	0	0	0	0	0	39	35	38
23:00	0	0	0	4	3	3	2	1	0	0	0	0	0	0	13	42	46
Total	39	64	283	1063	1056	367	54	9	0	0	0	0	0	0	2935		
Percent	1.3%	2.2%	9.6%	36.2%	36.0%	12.5%	1.8%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	07:00	06:00							08:00		
Vol.	13	20	44	99	103	44	6	1							293		
PM Peak	15:00	15:00	15:00	16:00	17:00	17:00	15:00	12:00							16:00		
Vol.	25	26	53	109	104	35	5	2							258		
Grand Total	61	103	563	2132	2205	800	123	17	1	0	0	0	0	0	6005		
Percent	1.0%	1.7%	9.4%	35.5%	36.7%	13.3%	2.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 25 MPH
50th Percentile : 30 MPH
85th Percentile : 35 MPH
95th Percentile : 39 MPH

Statistics

10 MPH Pace Speed : 26-35 MPH
Number in Pace : 4337
Percent in Pace : 72.2%
Number of Vehicles > 40 MPH : 141
Percent of Vehicles > 40 MPH : 2.3%
Mean Speed(Average) : 31 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound, Eastbound

Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		85th	95th
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
04/05/22	0	0	2	6	3	0	0	0	0	0	0	0	0	0	11	32	34
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
02:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	29	29
03:00	0	0	0	3	2	1	0	0	0	0	0	0	0	0	6	35	38
04:00	0	0	0	3	8	3	0	0	0	0	0	0	0	0	14	36	38
05:00	0	0	3	15	16	8	1	1	0	0	0	0	0	0	44	37	39
06:00	1	2	13	47	63	18	3	**2**	0	0	0	0	0	0	149	35	39
07:00	3	2	33	165	**155**	**67**	**11**	1	0	0	0	0	0	1	438	36	39
08:00	**17**	**13**	**86**	**215**	149	47	7	2	0	0	**1**	0	0	1	**538**	34	38
09:00	8	5	31	127	121	30	5	1	0	0	0	0	0	0	328	34	38
10:00	1	4	24	120	129	35	9	0	0	0	0	0	0	0	322	34	38
11:00	1	0	21	105	150	51	9	1	0	0	0	0	0	**2**	340	36	39
12 PM	3	0	16	149	152	37	**10**	0	0	0	0	0	0	0	367	34	38
13:00	6	2	32	162	161	38	6	0	0	0	0	0	0	0	407	34	38
14:00	7	2	35	182	185	45	8	**1**	0	0	0	0	0	**2**	467	34	38
15:00	**32**	**17**	**103**	223	148	28	3	0	0	0	0	0	0	1	555	33	35
16:00	12	7	44	**254**	213	48	4	0	0	**1**	0	0	0	0	583	34	37
17:00	9	15	34	232	**237**	**50**	5	0	0	0	**1**	0	0	1	**584**	34	37
18:00	9	0	35	157	166	42	3	0	0	0	0	0	0	1	413	34	37
19:00	4	1	38	137	68	18	1	0	0	0	0	0	0	0	267	33	36
20:00	1	1	11	83	57	15	1	0	0	0	0	0	0	0	169	34	37
21:00	1	1	4	41	25	8	0	1	0	0	0	0	0	0	81	34	38
22:00	0	0	5	22	19	5	2	0	0	0	0	0	0	0	53	34	39
23:00	0	0	5	12	11	3	3	0	**1**	0	0	0	0	0	35	37	43
Total	115	72	575	2463	2238	597	91	10	1	1	2	0	0	9	6174		
Percent	1.9%	1.2%	9.3%	39.9%	36.2%	9.7%	1.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	07:00	06:00			08:00			11:00	08:00		
Vol.	17	13	86	215	155	67	11	2			1			2	538		
PM Peak	15:00	15:00	15:00	16:00	17:00	17:00	12:00	14:00	23:00	16:00	17:00			14:00	17:00		
Vol.	32	17	103	254	237	50	10	1	1	1	1			2	584		

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound, Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
04/06/22	0	0	0	3	1	3	0	0	0	0	0	0	0	0	7	38	39
01:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	37	39
02:00	0	0	0	0	2	1	1	0	0	0	0	0	0	0	4	42	43
03:00	0	0	0	0	4	0	1	0	0	0	0	0	0	0	5	41	43
04:00	0	0	1	6	7	4	0	0	0	0	0	0	0	0	18	36	38
05:00	0	0	3	15	18	5	2	0	0	0	0	0	0	0	43	35	39
06:00	2	2	8	53	69	27	3	**1**	0	0	0	0	0	0	165	36	39
07:00	8	3	16	139	160	**58**	**6**	1	0	0	0	0	0	1	392	35	38
08:00	**24**	**24**	**82**	**218**	**163**	25	2	1	0	0	0	0	0	0	**539**	33	35
09:00	3	8	26	135	115	25	4	0	0	0	0	0	0	**3**	319	34	37
10:00	0	2	22	108	120	36	1	0	0	0	0	0	0	1	290	34	38
11:00	2	1	29	132	136	25	4	1	0	0	0	0	0	0	330	34	37
12 PM	4	1	23	156	154	38	2	**3**	0	0	0	0	0	**1**	382	34	38
13:00	5	3	35	150	158	40	2	0	0	0	0	0	0	1	394	34	37
14:00	11	0	49	173	139	36	4	0	0	0	0	0	0	1	413	34	37
15:00	**45**	**33**	**96**	196	98	25	**6**	0	0	0	0	**1**	**1**	0	501	32	36
16:00	13	9	44	**248**	189	35	6	0	0	0	0	0	0	1	545	33	36
17:00	9	3	48	244	**203**	**50**	6	0	**1**	0	0	0	0	0	**564**	34	37
18:00	4	1	25	142	163	26	3	0	0	0	0	0	0	0	364	34	37
19:00	1	3	23	84	85	26	4	0	0	0	0	0	0	0	226	34	38
20:00	2	0	14	54	50	8	3	1	0	0	0	0	0	0	132	34	38
21:00	2	0	6	41	30	11	3	2	0	0	0	0	0	0	95	35	40
22:00	0	2	9	28	25	10	0	0	0	0	0	0	0	0	74	34	38
23:00	0	0	3	9	8	5	2	1	0	0	0	0	0	0	28	38	44
Total	135	95	562	2335	2098	520	65	11	1	0	0	1	1	9	5833		
Percent	2.3%	1.6%	9.6%	40.0%	36.0%	8.9%	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%			
AM Peak	08:00	08:00	08:00	08:00	08:00	07:00	07:00	06:00						09:00	08:00		
Vol.	24	24	82	218	163	58	6	1						3	539		
PM Peak	15:00	15:00	15:00	16:00	17:00	17:00	15:00	12:00	17:00			15:00	15:00	12:00	17:00		
Vol.	45	33	96	248	203	50	6	3	1			1	1	1	564		
Grand Total	250	167	1137	4798	4336	1117	156	21	2	1	2	1	1	18	12007		
Percent	2.1%	1.4%	9.5%	40.0%	36.1%	9.3%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			

	15th Percentile :	25 MPH
	50th Percentile :	29 MPH
	85th Percentile :	34 MPH
	95th Percentile :	38 MPH

Statistics		
	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	9134
	Percent in Pace :	76.1%
	Number of Vehicles > 40 MPH :	202
	Percent of Vehicles > 40 MPH :	1.7%
	Mean Speed(Average) :	30 MPH

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
05:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
06:00	0	47	14	0	2	0	1	0	0	0	0	0	0	0	64
07:00	0	117	30	3	4	2	1	2	0	0	0	0	0	1	160
08:00	8	196	36	2	9	1	3	2	0	1	0	0	0	0	258
09:00	2	105	31	0	7	0	1	1	0	0	0	0	1	1	149
10:00	0	120	19	0	5	0	0	2	0	0	0	0	0	0	146
11:00	1	137	29	1	7	0	2	0	0	0	0	0	0	0	177
12 PM	3	148	37	0	3	2	2	0	1	0	0	0	0	0	196
13:00	2	144	33	1	12	1	0	1	0	0	0	0	0	2	196
14:00	3	185	46	2	5	0	1	2	0	0	0	0	0	0	244
15:00	16	219	53	6	8	3	2	7	1	0	0	0	0	3	318
16:00	7	246	40	0	8	1	4	10	1	0	0	1	0	2	320
17:00	10	235	43	0	2	1	4	1	0	0	0	0	0	1	297
18:00	3	157	32	0	3	0	0	3	0	0	0	0	0	1	199
19:00	1	117	21	2	1	0	0	1	0	0	0	0	0	0	143
20:00	0	95	8	0	1	0	0	2	0	0	0	0	0	0	106
21:00	1	33	9	0	2	0	0	0	0	0	0	0	0	0	45
22:00	0	32	1	0	0	0	0	0	1	0	0	0	0	0	34
23:00	0	19	5	0	0	0	0	0	0	0	0	0	0	0	24
Total	57	2376	490	17	79	12	21	34	4	1	0	1	1	11	3104
Percent	1.8%	76.5%	15.8%	0.5%	2.5%	0.4%	0.7%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.4%	
AM Peak	08:00	08:00	08:00	07:00	08:00	07:00	08:00	07:00		08:00			09:00	07:00	
Vol.	8	196	36	3	9	2	3	2		1			1	1	
PM Peak	15:00	16:00	15:00	15:00	13:00	15:00	16:00	16:00	12:00			16:00		15:00	
Vol.	16	246	53	6	12	3	4	10	1			1		3	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
05:00	0	11	1	0	0	0	0	0	0	0	0	0	0	0	12
06:00	1	39	12	1	2	1	1	0	0	0	0	0	0	0	57
07:00	1	110	15	1	4	1	1	5	0	0	0	0	0	0	138
08:00	6	180	36	5	8	2	3	5	0	0	0	0	0	1	246
09:00	4	99	27	0	13	0	3	3	0	0	0	0	0	0	149
10:00	2	94	29	2	6	0	0	2	1	0	0	0	0	0	136
11:00	0	114	33	1	5	2	0	4	0	0	0	0	0	0	159
12 PM	3	154	32	1	4	0	0	3	0	0	0	1	0	0	198
13:00	0	154	34	1	9	0	1	1	0	0	0	0	0	1	201
14:00	4	164	34	2	4	0	0	0	0	0	0	0	0	1	209
15:00	8	192	36	8	9	0	0	4	0	0	0	0	0	1	258
16:00	6	217	42	0	7	2	2	8	0	0	0	0	0	3	287
17:00	6	246	41	0	11	0	4	3	0	0	0	0	0	2	313
18:00	3	156	30	0	4	0	1	2	0	0	0	0	0	1	197
19:00	1	116	16	0	1	0	0	2	0	0	0	0	0	0	136
20:00	0	80	5	0	0	0	0	0	0	0	0	0	0	0	85
21:00	0	46	5	0	2	0	0	0	0	0	0	0	0	0	53
22:00	0	29	5	0	0	0	0	1	0	0	0	0	0	0	35
23:00	0	12	3	0	0	0	0	0	0	0	0	0	0	0	15
Total	45	2223	440	22	89	8	16	43	1	0	0	1	0	10	2898
Percent	1.6%	76.7%	15.2%	0.8%	3.1%	0.3%	0.6%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	
AM Peak	08:00	08:00	08:00	08:00	09:00	08:00	08:00	07:00	10:00					08:00	
Vol.	6	180	36	5	13	2	3	5	1					1	
PM Peak	15:00	17:00	16:00	15:00	17:00	16:00	17:00	16:00				12:00		16:00	
Vol.	8	246	42	8	11	2	4	8				1		3	
Grand Total	102	4599	930	39	168	20	37	77	5	1	0	2	1	21	6002
Percent	1.7%	76.6%	15.5%	0.6%	2.8%	0.3%	0.6%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	

Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDatallc.com or 413.668.5094

Location: Elm Street
Location: West of North Elm
City, State: Northampton, Massachusetts
Client: Fuss & O'Neill

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
05:00	1	31	2	0	2	0	0	0	0	0	0	0	0	0	36
06:00	1	66	10	0	7	0	0	1	0	0	0	0	0	0	85
07:00	1	224	36	1	14	0	0	2	0	0	0	0	0	0	278
08:00	4	219	44	2	8	2	0	1	0	0	0	0	0	0	280
09:00	2	134	29	2	10	0	0	2	0	0	0	0	0	0	179
10:00	0	133	28	1	12	0	0	2	0	0	0	0	0	0	176
11:00	0	127	22	2	9	1	0	1	0	0	0	0	1	0	163
12 PM	1	136	21	0	9	0	1	2	0	0	0	0	0	1	171
13:00	1	163	33	1	10	0	1	2	0	0	0	0	0	0	211
14:00	2	170	33	1	13	1	0	3	0	0	0	0	0	0	223
15:00	4	184	25	2	7	1	5	8	0	0	0	0	0	1	237
16:00	4	217	26	2	6	0	2	6	0	0	0	0	0	0	263
17:00	6	224	44	0	6	1	0	6	0	0	0	0	0	0	287
18:00	1	183	24	0	4	0	1	1	0	0	0	0	0	0	214
19:00	0	99	18	2	2	0	0	3	0	0	0	0	0	0	124
20:00	0	55	8	0	0	0	0	0	0	0	0	0	0	0	63
21:00	0	30	6	0	0	0	0	0	0	0	0	0	0	0	36
22:00	0	16	3	0	0	0	0	0	0	0	0	0	0	0	19
23:00	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
Total	28	2431	417	16	119	6	10	40	0	0	0	0	1	2	3070
Percent	0.9%	79.2%	13.6%	0.5%	3.9%	0.2%	0.3%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	08:00	07:00	08:00	08:00	07:00	08:00		07:00					11:00		
Vol.	4	224	44	2	14	2		2					1		
PM Peak	17:00	17:00	17:00	15:00	14:00	14:00	15:00	15:00						12:00	
Vol.	6	224	44	2	13	1	5	8						1	

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Client: Fuss & O'Neill

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	2	0	0	2	0	0	0	0	0	0	0	0	0	4
03:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	6	4	0	0	0	0	0	0	0	0	0	0	0	10
05:00	0	28	3	0	0	0	0	0	0	0	0	0	0	0	31
06:00	1	86	12	2	5	0	2	0	0	0	0	0	0	0	108
07:00	2	194	39	1	13	2	1	2	0	0	0	0	0	0	254
08:00	3	233	43	0	6	0	0	8	0	0	0	0	0	0	293
09:00	2	133	26	1	4	1	2	1	0	0	0	0	0	0	170
10:00	1	109	37	0	6	0	0	1	0	0	0	0	0	0	154
11:00	0	134	24	0	8	3	1	0	0	0	0	0	0	1	171
12 PM	4	134	31	2	11	0	0	2	0	0	0	0	0	0	184
13:00	1	151	27	0	11	0	2	1	0	0	0	0	0	0	193
14:00	0	154	34	2	7	1	1	5	0	0	0	0	0	0	204
15:00	5	179	35	2	7	4	2	8	0	0	0	0	0	1	243
16:00	2	210	30	0	9	0	0	7	0	0	0	0	0	0	258
17:00	1	198	42	0	6	1	0	3	0	0	0	0	0	0	251
18:00	0	144	13	1	5	0	2	1	0	0	0	0	0	1	167
19:00	3	75	10	0	2	0	0	0	0	0	0	0	0	0	90
20:00	0	40	6	0	0	0	0	1	0	0	0	0	0	0	47
21:00	0	37	4	0	0	0	1	0	0	0	0	0	0	0	42
22:00	0	30	6	0	3	0	0	0	0	0	0	0	0	0	39
23:00	0	12	1	0	0	0	0	0	0	0	0	0	0	0	13
Total	25	2296	429	11	105	12	14	40	0	0	0	0	0	3	2935
Percent	0.9%	78.2%	14.6%	0.4%	3.6%	0.4%	0.5%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	08:00	08:00	08:00	06:00	07:00	11:00	06:00	08:00						11:00	
Vol.	3	233	43	2	13	3	2	8						1	
PM Peak	15:00	16:00	17:00	12:00	12:00	15:00	13:00	15:00						15:00	
Vol.	5	210	42	2	11	4	2	8						1	
Grand Total	53	4727	846	27	224	18	24	80	0	0	0	0	1	5	6005
Percent	0.9%	78.7%	14.1%	0.4%	3.7%	0.3%	0.4%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	

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Belchertown, Massachusetts

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Westbound, Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/05/22	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
03:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	10	4	0	0	0	0	0	0	0	0	0	0	0	14
05:00	1	39	2	0	2	0	0	0	0	0	0	0	0	0	44
06:00	1	113	24	0	9	0	1	1	0	0	0	0	0	0	149
07:00	1	341	66	4	18	2	1	4	0	0	0	0	0	1	438
08:00	12	415	80	4	17	3	3	3	0	1	0	0	0	0	538
09:00	4	239	60	2	17	0	1	3	0	0	0	0	1	1	328
10:00	0	253	47	1	17	0	0	4	0	0	0	0	0	0	322
11:00	1	264	51	3	16	1	2	1	0	0	0	0	1	0	340
12 PM	4	284	58	0	12	2	3	2	1	0	0	0	0	1	367
13:00	3	307	66	2	22	1	1	3	0	0	0	0	0	2	407
14:00	5	355	79	3	18	1	1	5	0	0	0	0	0	0	467
15:00	20	403	78	8	15	4	7	15	1	0	0	0	0	4	555
16:00	11	463	66	2	14	1	6	16	1	0	0	1	0	2	583
17:00	16	459	87	0	8	2	4	7	0	0	0	0	0	1	584
18:00	4	340	56	0	7	0	1	4	0	0	0	0	0	1	413
19:00	1	216	39	4	3	0	0	4	0	0	0	0	0	0	267
20:00	0	150	16	0	1	0	0	2	0	0	0	0	0	0	169
21:00	1	63	15	0	2	0	0	0	0	0	0	0	0	0	81
22:00	0	48	4	0	0	0	0	0	1	0	0	0	0	0	53
23:00	0	28	7	0	0	0	0	0	0	0	0	0	0	0	35
Total	85	4807	907	33	198	18	31	74	4	1	0	1	2	13	6174
Percent	1.4%	77.9%	14.7%	0.5%	3.2%	0.3%	0.5%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	08:00	08:00	08:00	07:00	07:00	08:00	08:00	07:00		08:00			09:00	07:00	
Vol.	12	415	80	4	18	3	3	4		1			1	1	
PM Peak	15:00	16:00	17:00	15:00	13:00	15:00	15:00	16:00	12:00			16:00		15:00	
Vol.	20	463	87	8	22	4	7	16	1			1		4	

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Westbound, Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/06/22	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	2	0	0	2	0	0	0	0	0	0	0	0	0	4
03:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
04:00	0	13	5	0	0	0	0	0	0	0	0	0	0	0	18
05:00	0	39	4	0	0	0	0	0	0	0	0	0	0	0	43
06:00	2	125	24	3	7	1	3	0	0	0	0	0	0	0	165
07:00	3	304	54	2	17	3	2	7	0	0	0	0	0	0	392
08:00	9	413	79	5	14	2	3	13	0	0	0	0	0	1	539
09:00	6	232	53	1	17	1	5	4	0	0	0	0	0	0	319
10:00	3	203	66	2	12	0	0	3	1	0	0	0	0	0	290
11:00	0	248	57	1	13	5	1	4	0	0	0	0	0	1	330
12 PM	7	288	63	3	15	0	0	5	0	0	0	1	0	0	382
13:00	1	305	61	1	20	0	3	2	0	0	0	0	0	1	394
14:00	4	318	68	4	11	1	1	5	0	0	0	0	0	1	413
15:00	13	371	71	10	16	4	2	12	0	0	0	0	0	2	501
16:00	8	427	72	0	16	2	2	15	0	0	0	0	0	3	545
17:00	7	444	83	0	17	1	4	6	0	0	0	0	0	2	564
18:00	3	300	43	1	9	0	3	3	0	0	0	0	0	2	364
19:00	4	191	26	0	3	0	0	2	0	0	0	0	0	0	226
20:00	0	120	11	0	0	0	0	1	0	0	0	0	0	0	132
21:00	0	83	9	0	2	0	1	0	0	0	0	0	0	0	95
22:00	0	59	11	0	3	0	0	1	0	0	0	0	0	0	74
23:00	0	24	4	0	0	0	0	0	0	0	0	0	0	0	28
Total	70	4519	869	33	194	20	30	83	1	0	0	1	0	13	5833
Percent	1.2%	77.5%	14.9%	0.6%	3.3%	0.3%	0.5%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	08:00	08:00	08:00	08:00	07:00	11:00	09:00	08:00	10:00					08:00	
Vol.	9	413	79	5	17	5	5	13	1					1	
PM Peak	15:00	17:00	17:00	15:00	13:00	15:00	17:00	16:00				12:00		16:00	
Vol.	13	444	83	10	20	4	4	15				1		3	
Grand Total	155	9326	1776	66	392	38	61	157	5	1	0	2	2	26	12007
Percent	1.3%	77.7%	14.8%	0.5%	3.3%	0.3%	0.5%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	