



BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

Monica Tibbits-Nutt, MassDOT Secretary and CEO and MPO Chair
Tegin L. Teich, Executive Director, MPO Staff

TECHNICAL MEMORANDUM

DATE: November 2, 2023
TO: Aaron Clausen, City of Lynn
FROM: Julie Dombroski, Boston Region MPO
Seth Asante, Boston Region MPO
RE: Multimodal Mobility Improvement Program (MMIP): Lynn
Intersections Study

This memorandum summarizes the analyses and improvement strategies for two intersections in the City of Lynn—the intersection of Route 129 (Washington Street) at Hanover Street and Beacon Hill Avenue and the intersection known as Freeman Square.

This memorandum contains the following sections:

1. Study Background
2. Existing Conditions
3. Issues and Concerns
4. Crash Data Analysis
5. Existing Conditions Analysis
6. Proposed Short-term Improvements
7. Long-term Improvement Alternatives
8. Recommendations

This memorandum also includes technical appendices that contain data and methods applied in the study.

1 STUDY BACKGROUND

The Boston Region Metropolitan Planning Organization (MPO) conducts studies of intersections with safety and mobility concerns as part of the Multimodal Mobility Infrastructure Program (MMIP). The outcome of these studies is recommended improvements that focus on all roadway users within a Complete Streets framework, including people walking, biking, driving, using assistive mobility devices, and taking transit. Municipalities in the region and the Massachusetts Department of Transportation (MassDOT) have been receptive to these studies, which provide the opportunity to review conceptual options to improve a specific intersection before committing design and engineering funds

Civil Rights, nondiscrimination, and accessibility information is on the last page.

to a project. If a proponent initiates a project that qualifies for state and federal funds, the study’s documentation may be useful to both MassDOT and the project proponent for completing MassDOT Highway Division’s project initiation forms, identifying problems at the intersection, justifying the need for improvements, and providing improvement concepts to advance into the preliminary design and engineering stages.

The MPO identified several intersections that should be prioritized based on the following criteria: safety conditions, multimodal significance, regional significance, transportation equity, geographical distribution, and implementation potential. The intersections selected for study in 2023 were Route 129 (Washington Street) at Hanover Street and Beacon Hill Avenue, and Freeman Square (Union, Buffum, Baldwin, and Silsbee Streets) in the City of Lynn. Lynn, the largest city in Essex County and an urban manufacturing and commercial center, has a need for a variety of roadway improvements to accommodate its growing population.

Washington Street was identified in the Lynn Safe Streets for People Playbook as a priority street for improvement, and safety is one of the major concerns at both intersections. The crash rate at each intersection is significantly higher than the MassDOT District 4 rate, and the intersection of Washington and Hanover Streets falls within the top-five percent of crash clusters statewide.

Both intersections can better serve the most vulnerable roadway users. The intersection of Washington and Hanover Streets includes a bus stop (Route 435) and is located near a school and housing for older adults. Freeman Square is in a more commercial area with many businesses on Union Street and includes two bus stops on Union Street serving Routes 436, 455, and 456). This intersection could be improved to better accommodate people accessing nearby businesses by foot or public transport. According to the Fall 2022 bus ridership data, this stop has 37 boardings on an average weekday.

2 EXISTING CONDITIONS

The intersections studied are both located in the city of Lynn. The first, the intersection of Route 129 (Washington Street) and Hanover Street and Beacon Hill Avenue, is located northwest of downtown Lynn. The second is Freeman Square—the intersection of Union, Buffum, Baldwin, and Silsbee Streets—which is located east of the downtown area of Lynn within the city center. Figure 1 shows each location within the city of Lynn. There are numerous safety issues at each intersection.

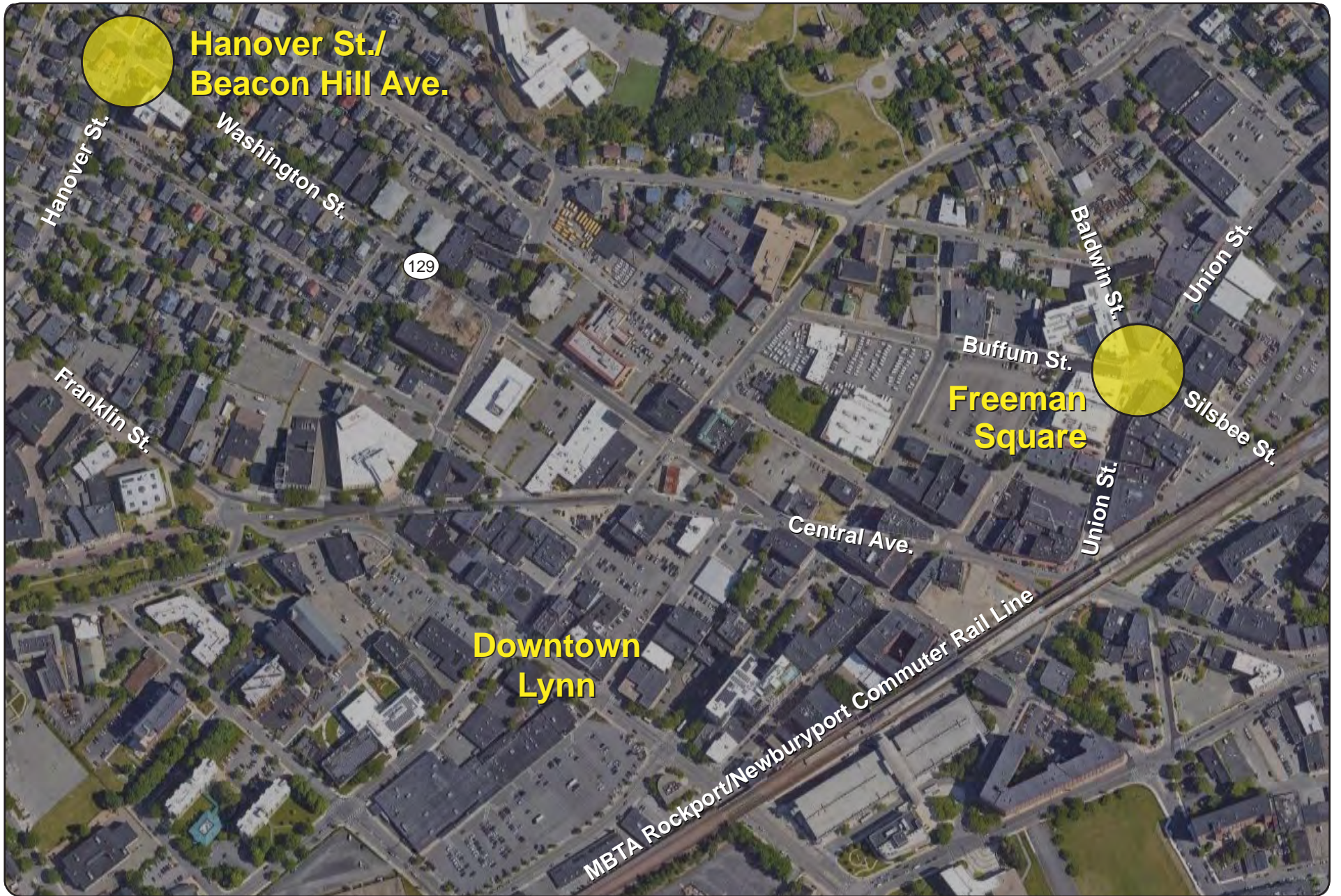


FIGURE 1
Study Areas

Route 129 (Washington Street) is an important connector in the city of Lynn. It connects the center of the city to Route 107 (Western Avenue). It runs mostly in a northwest-southeast direction and is a two-lane roadway. Most of the land use around the route is residential, but there is primarily commercial development at the northern and southern ends of the route—near Western Avenue and downtown, respectively. The study intersection is in the middle of the residential section of Washington Street. Hanover Street and Beacon Hill Avenue are residential connectors that run primarily northeast-southwest. These roads do not carry as high a volume of traffic as Washington Street.

The Louis Barret Residences—an apartment complex for those 55 years of age or older—is located on the corner of Washington Street and Hanover Street. In addition to other single- and multi-family housing surrounding the intersection, there is also a barber shop (Menor da Barber Studio) and a funeral home (Goodrich Funeral Home) within the study area. The intersection is near Cobbet Elementary School and the Boys and Girls Club of Lynn. It is widely used by students walking to and from school and older populations who live in the Louis Barret apartments.

Union Street is the primary route that travels through Freeman Square. It is a two-lane mostly north-south roadway that connects the center of the city to residential areas east of downtown Lynn. The other streets that meet at the intersection of Freeman Square are Buffum Street, Baldwin Street, and Silsbee Street. Buffum is a two-way east-west connector between Freeman Square and Liberty Street. Baldwin and Silsbee Streets are one-way routes. Both carry traffic out of the intersection—Baldwin Street northwest-bound and Silsbee Street eastbound.

Most of the land use near the intersection is commercial or mixed-use. There are numerous businesses and restaurants around Freeman Square, but one of the anchors of the neighborhood is the Lynn Community Health Center (LCHC). The LCHC provides primary care services to more than 40 percent of Lynn residents.¹ Because the LCHC is located in Freeman Square, many people traveling through the intersection are traveling to the health center, whether they are patients or employees. Other notable destinations near Freeman Square include the Greater Lynn Senior Services Center, Family Dollar, and a variety of restaurants and stores.

¹ <https://www.lynnchc.org/about-lynn-community-health-center/>

2.1 Engagement Activities

MPO staff coordinated with the City of Lynn and the LCHC to establish dates for in-person public engagement opportunities. After discussions with stakeholders, it was determined that a short survey would be prepared for each study intersection and distributed via in-person methods. Staff provided incentives (\$5 Dunkin Donuts gift cards) to recognize the participation of people who engaged with staff to discuss the intersections and answer survey questions. The survey questions for each intersection can be found in Appendix A.

The survey prepared for the intersection of Route 129 (Washington Street) at Hanover Street and Beacon Hill Avenue included five questions regarding user safety. The residents at the Louis Barrett Residences were one of the major groups of stakeholders who were intended to be reached by this survey. MPO staff made multiple attempts to contact the management of the Louis Barrett Residences in order to set up a time to distribute surveys to residents; but unfortunately, staff were unable to make progress on that front. In lieu of setting up a formal survey distribution, staff visited the study intersection on Tuesday, August 1, and Tuesday, August 8, 2023, to chat with residents and other people in the neighborhood. Staff spoke to a number of people each day, including residents of the Louis Barrett Residences and others in the neighborhood, and recorded their responses to the survey.

A similar survey was prepared for the Freeman Square intersection, but staff were better able to engage with the public via four days of tabling in the study area. After coordinating with the City of Lynn and LCHC, MPO staff were able to set up outside of the LCHC between 3:00 PM and 5:00 PM on Monday, July 31, Tuesday, August 1, Monday, August 7, and Tuesday, August 8. At each of these events, a posterboard with an aerial image of the intersection was available for people to note areas of the intersection where they felt safe, unsafe, and neither safe nor unsafe. Figure 2 is an image of the posterboard with stickers and notes about safety issues and improvements placed by members of the public. (The photo was taken on Tuesday, August 8.) In addition to the posterboard, staff brought tablets with the survey questions and were able to fill them out based on how participants responded.

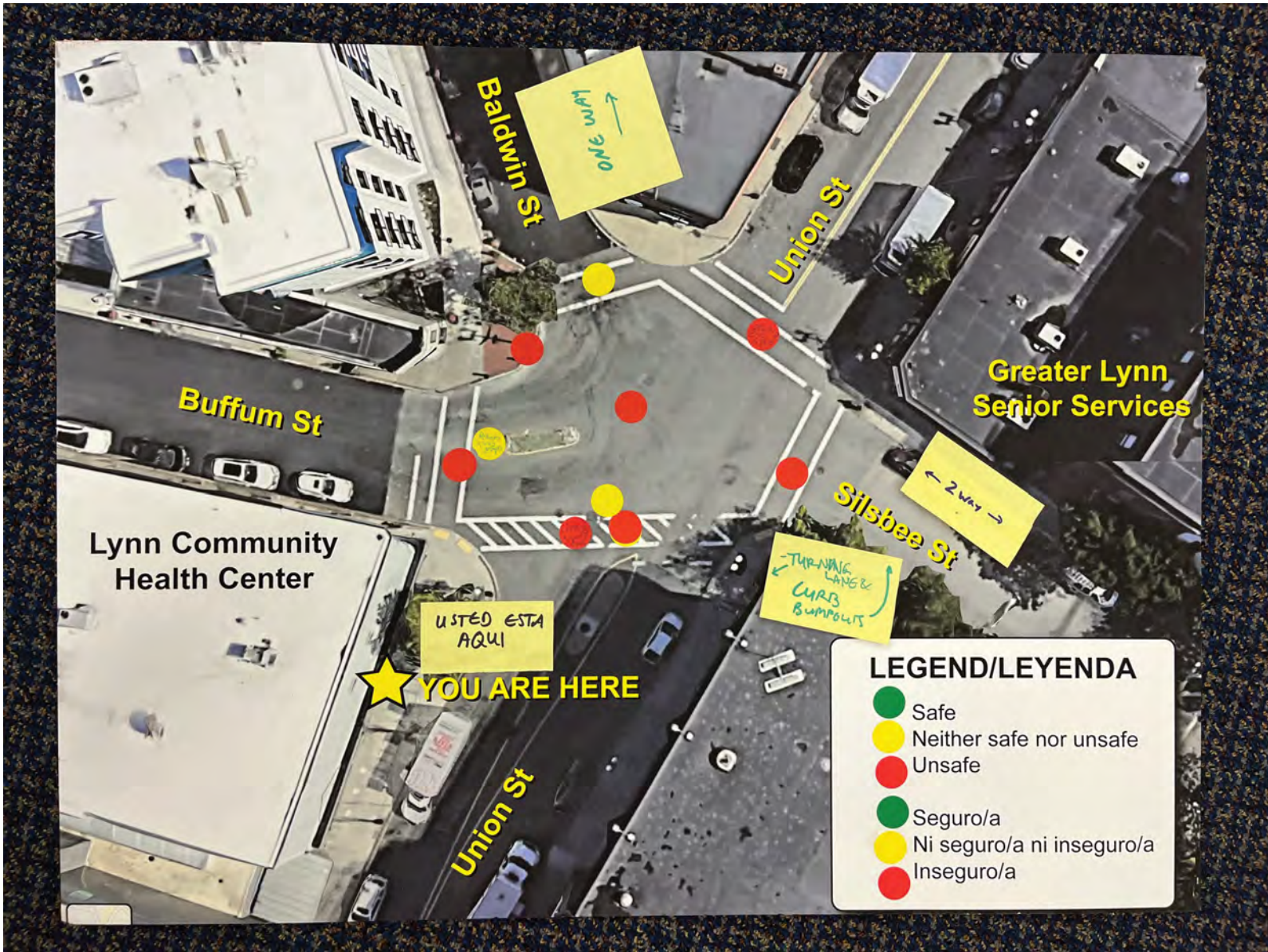


FIGURE 2
Freeman Square Engagement Posterboard

An interpreter provided by the City of Lynn was in attendance on Monday, July 31, and Monday, August 7, to assist in better engagement with the Spanish-speaking participants and Spanish-speaking MPO staff were also present on Monday, July 31, Tuesday, August 1, and Tuesday, August 8.

For both intersections, staff engaged roughly the same number of English and Spanish speakers. Staff collected demographic information from survey respondents, and the majority of respondents identified as being Hispanic or Latino/a and having a household income that MPO staff classify as low income (less than 200 percent of the federal poverty line). Nearly half of respondents identified as having a disability.

Feedback: Washington Street at Hanover Street

In addition to reaching out to management at the Louis Barrett Residences at Washington Street and Hanover Street, and other businesses in the area, staff visited the intersection and canvassed residents of the Louis Barrett residences and other people passing through the area to discuss the study and collect survey responses. Survey responses can be found in Appendix A. Many respondents reported witnessing car collisions in the intersection and knowing people who had been involved in accidents. One respondent reported being hit in the intersection while crossing on foot. Most respondents reported feeling very unsafe in the intersection and raised several specific safety concerns, especially regarding vehicle speed and driver behavior.

When asked about possible safety improvements for the intersection, respondents suggested better signage and signalization for the pedestrian crossings, including full signal lights, a crossing guard (especially during the school year), and signage to indicate the presence of children, older adults, and/or people with disabilities in the area. Respondents also suggested moving the light and crossing on Washington Street by the Louis Barrett Residences entrance to the Hanover Street intersection. Below are summaries of additional comments that staff recorded:

- Speeding along Washington Street is an issue.
- Witnesses have seen multiple people crossing the street hit by vehicles.
- Many school-aged children walk through the intersection.
- Drivers do not obey the red light at the mid-block crossing.
- There is interest in a bench and/or shelter at each of the bus stops on Washington Street.
- Many respondents felt that there are a lot of “near-miss” accidents.
- Distracted driving is an issue.

Feedback: Freeman Square

Staff collected 40 survey responses while tabling at Freeman Square; several other people also participated in the interactive intersection safety mapping activity (Figure 2). Twenty-one respondents completed the survey in English, and 17 respondents completed the survey in Spanish. Staff also collected one response in Haitian Creole and one in Arabic.

The majority of respondents to the Freeman Square intersection (30) indicated that they usually crossed the intersection and traveled through the area on foot or using a mobility device, while many respondents (13) also indicated that they drove, and a small number took the bus or used a rideshare/ride-hailing service. Visiting LCHC was the most commonly cited reason for traveling through the area (25), followed by visiting stores or restaurants (13), then working (6) and living nearby (6). A few respondents also indicated that they traveled through the area for recreation or fitness purposes and to access other social services.

The overwhelming majority of respondents indicated that they feel unsafe crossing or traveling through Freeman Square. Figure 3 illustrates the frequency of specific problems respondents cited. Among additional comments respondents provided under the “other” category (shown in Figure 3), several responses expanded on infrastructure condition, citing the excessive length of the crosswalks, poor visibility of crosswalk markings, and poor lighting in the square at night. Several other responses expanded on driver behavior, sharing stories of “near-miss” collisions with drivers who were distracted (using phones) and drivers who pulled out into the intersection quickly and aggressively, often cutting off other pedestrians and vehicles and blocking the crosswalks. Responses also indicated some general confusion about (or disregard of) right-of-way in the intersection, parking regulations near the intersection, and direction of traffic flow on the streets leading into and out of the intersection.

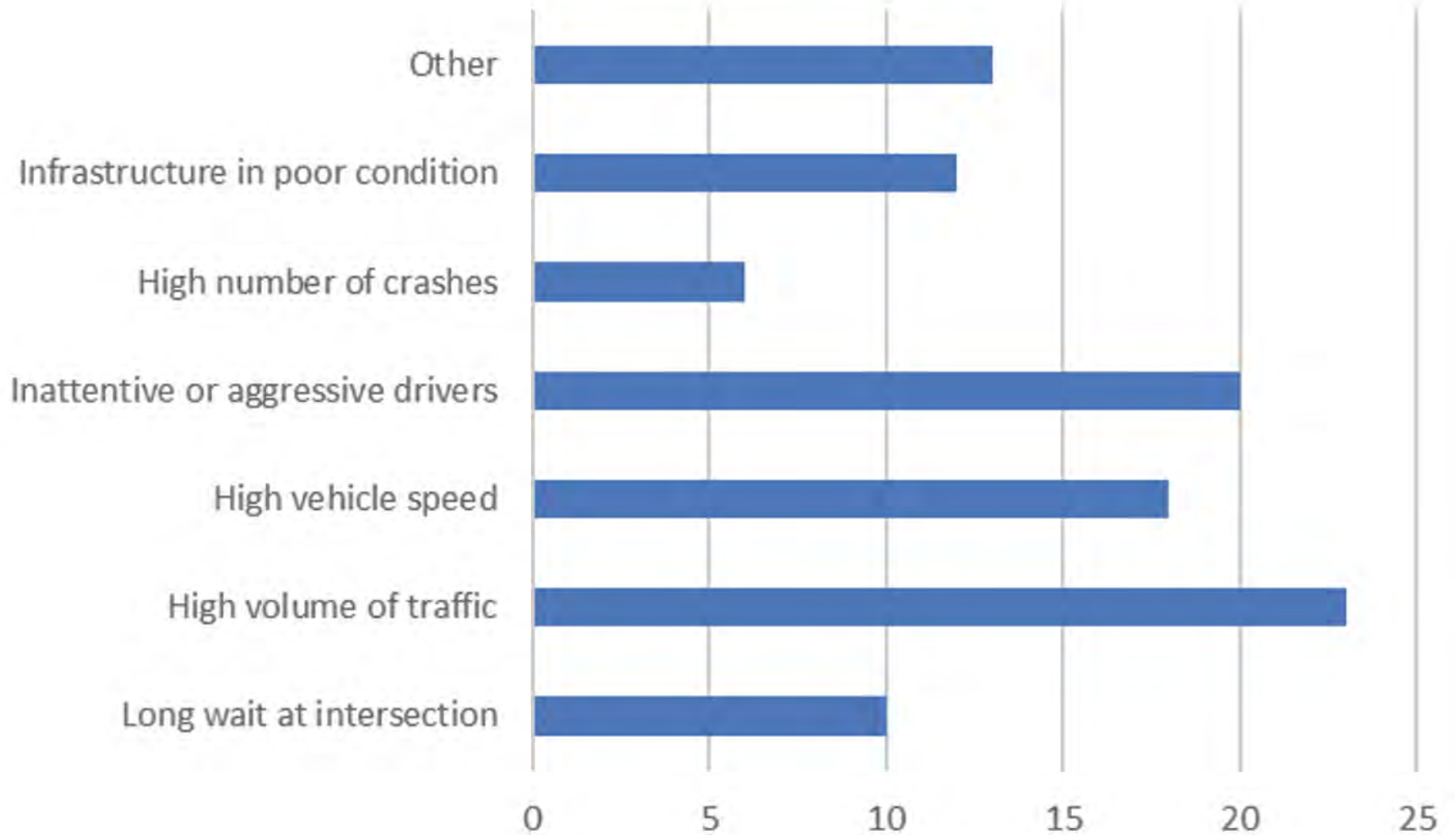


FIGURE 3
Respondent Selections of
Specific Problems in Freeman Square

When asked about possible safety improvements to Freeman Square, the majority of respondents supported improvements to pedestrian accommodations, such as crosswalks and sidewalks. Respondents also supported general safety improvements for all road users and interventions to reduce traffic congestion in the area. Below are summaries of specific responses about intersection improvements:

- Increase driver awareness.
- Add lights, flashing signs, or other infrastructure for pedestrian crossings; and make the crossings more visible.
- Improve parking enforcement (especially for double parking and large vehicles at the entrances and exits of the intersection) and potentially reduce some parking spaces and/or institute loading zones and rideshare drop-off zones around the intersection.
- Slow traffic entering the intersection, especially from Union Street; reduce speed limits, add signage, and/or add flashing speed signs.
- Improve visibility of stop signs, possibly with lights or signals.
- Create a rotary.
- Add more flowers and trees.
- Improve bus frequency and accommodations at bus stops.

3 ISSUES AND CONCERNS

Based on staff's field observations, discussions with City officials, public engagement results, stakeholder interviews, and analyses of crash data and existing operations, major issues at each intersection were identified as the following:

- *High-crash location*
The crash rate at each intersection is significantly higher than the MassDOT District 4 rate, and the intersection of Washington and Hanover Streets falls within the top-five percent of crash clusters statewide.
- *Pedestrian accessibility and safety concerns*
Existing pedestrian infrastructure at both intersections is relatively adequate and meets Americans with Disability Act (ADA) standards. However, field observations and survey results note that long crossing distances, obstructed visibility of crossings, and vehicle speeds endanger people walking in both intersections.

4 CRASH DATA ANALYSIS

Crash data analysis is essential to identify safety and operational problems at an intersection. Analyzing data on the frequency of crashes, types and patterns of collisions, and the circumstances under which crashes occur, such as the time of day and roadway surface conditions, also helps to develop improvement strategies.

4.1 Crash Statistics

MPO staff used the most recent six-year crash reports (January 2016–December 2021) for this study. Data was obtained using MassDOT’s IMPACT Crash Portal. Typically, five years of crash data is used, but an additional year of crash data was collected to account for the COVID-19 pandemic effects on vehicular travel in 2020. It should be noted that these are just reported crashes. Feedback from the community indicates that there likely could be unreported crashes at both intersections.

Washington Street at Hanover Street and Beacon Hill Avenue

There were 50 crashes in the six-year period at the intersection of Washington and Hanover Streets. The majority of crashes in the area occurred directly at the intersection, but there were a few crashes along Washington Street approaching the intersection. This intersection fell within the top-five percent of crash clusters statewide. The predominant crash type was the angle crash (37 crashes). The others included six rear-end crashes, four crashes involving a single vehicle only, two in which vehicles sideswiped each other while traveling in the same direction, and one sideswipe of vehicles traveling in opposite directions.

Table 1 summarizes the 50 crashes in terms of severity, collision type, pedestrian or bicycle involvement, time of the day, and weather and pavement conditions. Eighteen crashes (36 percent) caused personal injuries with no fatalities. Nearly half (48 percent) of all crashes occurred during peak periods (6:00 AM–10:00 AM and 2:00 PM–6:00 PM). More than a third (38 percent) of the collisions occurred during dark conditions.

**Table 1
Crash Summary at the Intersection of Washington Street, Hanover Street,
and Beacon Hill Avenue**

Statistics Period	2016	2017	2018	2019	2020	2021	6-Year Total	Annual Average
Total number of crashes	16	4	6	6	8	10	50	8.3
Severity								
Property damage only	9	2	3	3	5	9	31	5.2
Non-fatal injury	7	2	3	3	2	1	18	3.0
Fatality	0	0	0	0	0	0	0	0.0
Not reported/unknown	0	0	0	0	1	0	1	0.2
Collision type								
Single vehicle	0	2	2	0	0	0	4	0.7
Rear-end	2	0	1	0	1	2	6	1.0
Angle	13	2	3	6	6	7	37	6.2
Sideswipe, same direction	0	0	0	0	1	1	2	0.3
Sideswipe, opposite direction	1	0	0	0	0	0	1	0.2
Head-on	0	0	0	0	0	0	0	0.0
Rear-to-rear	0	0	0	0	0	0	0	0.0
Not reported/unknown	0	0	0	0	0	0	0	0.0
Involved pedestrian(s)	0	1	2	0	0	0	3	0.5
Involved cyclist(s)	1	0	0	0	0	0	1	0.2
Occurred during weekday peak periods*	7	3	2	3	4	5	24	4.0
Wet or icy pavement conditions	3	0	2	2	1	2	10	1.7
Dark conditions (lit or unlit)	6	0	3	3	3	4	19	3.2

* Peak periods are defined as 6:00 AM–10:00 AM and 2:00 PM–6:00 PM
Source: Central Transportation Planning Staff.

Freeman Square

There were 70 crashes in the six-year period in the area of Freeman Square. Most crashes in the area occurred at the intersection and along Union Street. The predominant crash types were sideswipes of vehicles traveling in the same direction (24 crashes), and rear-end (15), angle (14), and single-vehicle crashes (11). There were also three crashes not reported or of unknown type, two sideswipes of vehicles traveling in opposite directions, and one head-on crash. Table 2 summarizes the 70 crashes in terms of severity, collision type, pedestrian or bicycle involvement, time of the day, and weather and pavement conditions.

Eleven crashes (17 percent) caused personal injuries with no fatalities. There was one fatality in March of 2018. It involved a pedestrian in the crosswalk on

Silsbee Street and a vehicle turning from Union Street. Twenty-six crashes occurred during peak periods (6:00 AM–10:00 AM and 2:00 PM–6:00 PM). Less than a third (30 percent) of the collisions occurred during dark conditions.

**Table 2
Crash Summary at Freeman Square**

Statistics Period	2016	2017	2018	2019	2020	2021	6-Year Total	Annual Average
Total number of crashes	15	24	6	5	8	12	70	11.7
Severity								
Property damage only	13	20	4	2	7	10	56	9.3
Non-fatal injury	1	4	1	3	1	1	11	1.8
Fatality	0	0	1	0	0	0	1	0.2
Not reported/unknown	1	0	0	0	0	1	2	0.3
Collision type								
Single vehicle	0	5	2	1	3	0	11	1.8
Rear-end	2	5	2	3	2	1	15	2.5
Angle	3	4	1	0	3	3	14	2.3
Sideswipe, same direction	8	9	0	1	0	6	24	4.0
Sideswipe, opposite direction	0	1	0	0	0	1	2	0.3
Head-on	1	0	0	0	0	0	1	0.2
Rear-to-rear	0	0	0	0	0	0	0	0.0
Not reported/unknown	1	0	1	0	0	1	3	0.5
Involved pedestrian(s)	2	5	2	1	1	1	12	2.0
Involved cyclist(s)	0	0	0	0	0	0	0	0.0
Occurred during weekday peak periods*	4	14	0	1	3	4	26	4.3
Wet or icy pavement conditions	1	7	2	1	1	1	13	2.2
Dark conditions (lit or unlit)	4	7	2	3	1	2	19	3.2

* Peak periods are defined as 6:00 AM–10:00 AM and 2:00 PM–6:00 PM
Source: Central Transportation Planning Staff.

4.2 Collision Diagrams and Crash Pattern Analysis

Based on the police reports, staff constructed collision diagrams (Figures 4 and 5) that show the locations and patterns of all the crashes at each intersection. The information about each crash, including date, time, severity, collision type, most harmful event, weather conditions, and driver contributing code are summarized in Appendix B.



SYMBOLS

- | | |
|---------------------------|--------------------------------|
| → Moving Vehicle | → [hatched box] Parked Vehicle |
| ↔ Backing Vehicle | → [square] Fixed Object |
| ⋯ Non-Involved Vehicle | → [bicycle] Bicycle |
| → [pedestrian] Pedestrian | → [animal] Animal |

TYPES OF CRASH

- | | |
|-------------|-------------------|
| ↔↔↔ Head On | ↔↔ Sideswipe |
| ↔↔ Angle | ↔↔ Out of Control |
| ↔↔ Rear End | |

CRASH INDEX AND SEVERITY

- #, #, #
- # Property Damage Only Crash Index Number
 # Injury Crash Index Number
 # Fatal Crash Index Number



FIGURE 4
Collision Diagram: Washington Street at Hanover Street/Beacon Hill Avenue in Lynn
Police Crash Reports 2016-21



SYMBOLS

- | | |
|------------------------|-------------------|
| → Moving Vehicle | → Parked Vehicle |
| ↔ Backing Vehicle | → Fixed Object |
| ⋯ Non-Involved Vehicle | → Bicycle |
| → Pedestrian | → Animal |

TYPES OF CRASH

- | | |
|-------------|-------------------|
| ↔↔↔ Head On | ↔↔ Sideswipe |
| →↘↙ Angle | ↔↔ Out of Control |
| →↔ Rear End | |

CRASH INDEX AND SEVERITY

- #, #, #
- # Property Damage Only Crash Index Number
- # Injury Crash Index Number
- # Fatal Crash Index Number



FIGURE 5
Collision Diagram: Freeman Square in Lynn
Police Crash Reports 2016-21

5 EXISTING CONDITIONS ANALYSIS

To examine the existing conditions, MPO staff requested MassDOT’s assistance in collecting Automatic Traffic Recorder (ATR) counts on the approaching roadways and intersection turning movement counts (TMCs) for this study. The ATR counts were performed during the week of April 10–16, 2023. The TMCs were collected Thursday, April 13, and Saturday, April 15, 2023. Further detail of the ATR counts can be found in Appendix C.

Additional data was collected near the intersection of Washington Street and Hanover Street. Due to comments from City staff about speeding concerns along Washington Street, speed data was collected at a location northwest of the intersection. Pedestrian count data was also collected at the mid-block crossing on Washington Street, located southeast of the intersection, directly in front of the Louis Barrett apartments (included in Appendix C).

5.1 Washington Street at Hanover Street and Beacon Hill Avenue

Daily Traffic Volumes

Based on the data, staff estimated the average weekday traffic volumes in roadway sections near the intersection as follows:

- Washington Street, northwest of Hanover Street and Beacon Hill Avenue—13,300 vehicles, with a split of 7,315 (55 percent) southeast-bound vehicles and 5,985 (45 percent) northwest-bound vehicles
- Washington Street, southeast of Hanover Street and Beacon Hill Avenue—15,600 vehicles, with a split of 7,644 (49 percent) northwest-bound vehicles and 7,956 (51 percent) southeast-bound vehicles
- Hanover Street, south of —4,400 vehicles, with a split of 2,244 (51 percent) northbound vehicles and 2,156 (49 percent) southbound vehicles
- Beacon Hill Avenue, north of Washington Street—3,800 vehicles²

Turning Movement Counts

MassDOT collected turning movement counts at the study intersection on Thursday, April 13, 2023, during the morning peak period (6:00 AM–10:00 AM) and the evening peak period (2:00 PM–6:00 PM), and on Saturday, April 15, 2023, during the midday peak period (10:00 AM–2:00 PM). Figure 6 summarizes the 2023 AM and PM peak-hour traffic turning volumes by approach at the intersection.

² Beacon Hill Avenue is a one-way street, so there is no split between directions of travel.



FIGURE 6
Weekday Peak-Hour Turning Movement Counts
Washington Street at Hanover Street/Beacon Hill Avenue in Lynn

Speed Data

Speeding was noted as an issue along Washington Street. City staff have commented that many drivers use the street as a cut-through between downtown Lynn and Western Avenue. Residents of the Louis Barrett apartments also commented that they notice vehicles speeding and have witnessed near-miss crashes due to speeding.

The speed limit along Washington Street in the study area is 25 miles per hour. Speed data was collected by MassDOT between April 10 and April 18, 2023. The data show that the estimated 85th percentile speed of southeast-bound vehicles ranges between 29.2 miles per hour and 32.1 miles per hour. In the northwest-bound direction, the speed was 28.6 miles per hour and 33.7 miles per hour for each of the days speeds were collected. Further detail of the speed collection can be found in Appendix C.

Intersection Capacity Analysis

Based on the 2023 AM and PM peak-hour turning movements, staff conducted the intersection capacity analysis for the intersection of Washington Street at Hanover Street by using the Synchro traffic analysis and simulation program.³

Staff conducted traffic operations analyses consistent with the Highway Capacity Manual (HCM) methodologies (included in Appendix D). HCM methodology demonstrates driving conditions at signalized and unsignalized intersections in terms of level-of-service (LOS) ratings from A through F. LOS A represents the best operating conditions (little to no delay), while LOS F represents the worst operating conditions (very long delay). LOS E represents operating conditions at capacity (limit of acceptable delay). The Synchro capacity analysis can be found in Appendix E. Table 3 summarizes the delays, LOS, and queue lengths for the existing conditions. Traffic on Hanover Street experiences LOS E during the morning peak hours and LOS F during the evening peak hours. Traffic on Washington Street operates at LOS A during the same hours.

Traffic Signal Warrant Analysis

Investigating the need for a traffic control signal at an unsignalized intersection involves analyzing factors related to the existing traffic operations and safety conditions at the intersection, as well as the potential to improve these conditions. Such an investigation is called a traffic signal warrant analysis. The Manual on Uniform Traffic and Control Devices (MUTCD) lists nine traffic signal warrants that justify installing a traffic signal. Using the methodology outlined in

³ Staff used Synchro Version 10.3, developed and distributed by Trafficware Ltd. It can perform capacity analysis and traffic simulation (when combined with SimTraffic) for an individual intersection or a series of intersections in a roadway network.

the 2009 edition of the MUTCD, staff performed detailed traffic signal warrant analyses to determine whether the installation of a traffic control signal at the intersection of Washington Street and Hanover Street/Beacon Hill Avenue is justified and if signaling the intersection would improve safety and traffic operations. Existing conditions at the intersection of Washington Street and Hanover Street/Beacon Hill Avenue satisfy two of the warrants: Warrant 2, Four-Hour Vehicular Volumes and Warrant 3, Peak Hour Vehicular Volume. Detailed traffic signal warrant analysis worksheets are included in Appendix D.

**Table 3
Intersection Capacity Analysis
Washington Street at Hanover Street/Beacon Hill Avenue**

Approach	AM Delay (seconds)	AM LOS	AM Queue (feet)	PM Delay (seconds)	PM LOS	PM Queue (feet)
Existing Conditions						
Hanover St. NB	48.1	E	105	74.4	F	225
Washington St. EB	1.7	A	7	2.3	A	10
Washington St. WB	3.7	A	10	2.1	A	10
All approaches	7.6	A		16	C	
2030 No Build						
Hanover St. NB	48.9	E	112.5	72.5	F	230
Washington St. EB	2	A	7	2.4	A	8
Washington St. WB	4	A	13	2.1	A	9
All approaches	7.7	A		15.6	C	
2030 Alternative One						
Hanover St. NB	12.4	B	30	18.1	C	82.5
Washington St. EB	31.6	D	253	35.8	E	243
Washington St. WB	26	D	200	71.1	F	427.5
All approaches	26.9	D		47.8	E	
2030 Alternative Two						
Hanover St. NB	19.9	B	106	27.5	C	250
Washington St. EB	13.7	B	228	15.2	B	306
Washington St. WB	17.1	B	238	19.2	B	452
All approaches	15.9	B		10.4	B	

EB = eastbound. LOS = level of service. NB = northbound. SB = southbound. WB = westbound.
Source: Central Transportation Planning Staff.

5.2 Freeman Square

Daily Traffic Volumes

Based on the data, staff estimated the average weekday traffic volumes in roadway sections near the intersection as follows:

- Buffum Street, west of Union Street—7,900 vehicles, with a split of 4,977 (63 percent) eastbound vehicles and 2,923 (36 percent) westbound vehicles
- Silsbee Street, east of Union Street—4,100 vehicles
- Baldwin Street, northwest of Union Street—1,400 vehicles⁴
- Union Street, north of Silsbee Street—17,100 vehicles, with a split of 8,379 (49 percent) northbound vehicles and 8,721 (51 percent) southbound vehicles
- Union Street, south of Buffum Street—13,200 vehicles, with a split of 7,392 (56 percent) northbound vehicles and 5,808 (44 percent) southbound vehicles.

Turning Movement Counts

MassDOT collected turning movement counts at the study intersection on Thursday, April 13, 2023, during the morning peak period (6:00 AM–10:00 AM) and the evening peak period (2:00 PM–6:00 PM), and on Saturday, April 15, 2023, during the midday peak period (10:00 AM–2:00 PM). Figure 7 summarizes the 2023 AM and PM peak-hour traffic turning volumes by approach at the intersection (included in Appendix C).

Intersection Capacity Analysis

Based on the 2023 AM and PM peak-hour turning movements, staff conducted the intersection capacity analysis for the Freeman Square intersection by using the Synchro traffic analysis and simulation program. During the morning peak hours, traffic at all approaches to the intersection experiences LOS B. During the evening peak hours, traffic at all approaches experiences LOS D. The Synchro capacity analysis can be found in Appendix F. Table 4 summarizes the delays, LOS, and queue lengths. Traffic on Buffum Street and Union Street operate at LOS B during the morning peak hours and LOS C or D during the evening peak hours.

⁴ Baldwin and Silsbee Streets are one-way, so there are no splits between directions of travel.

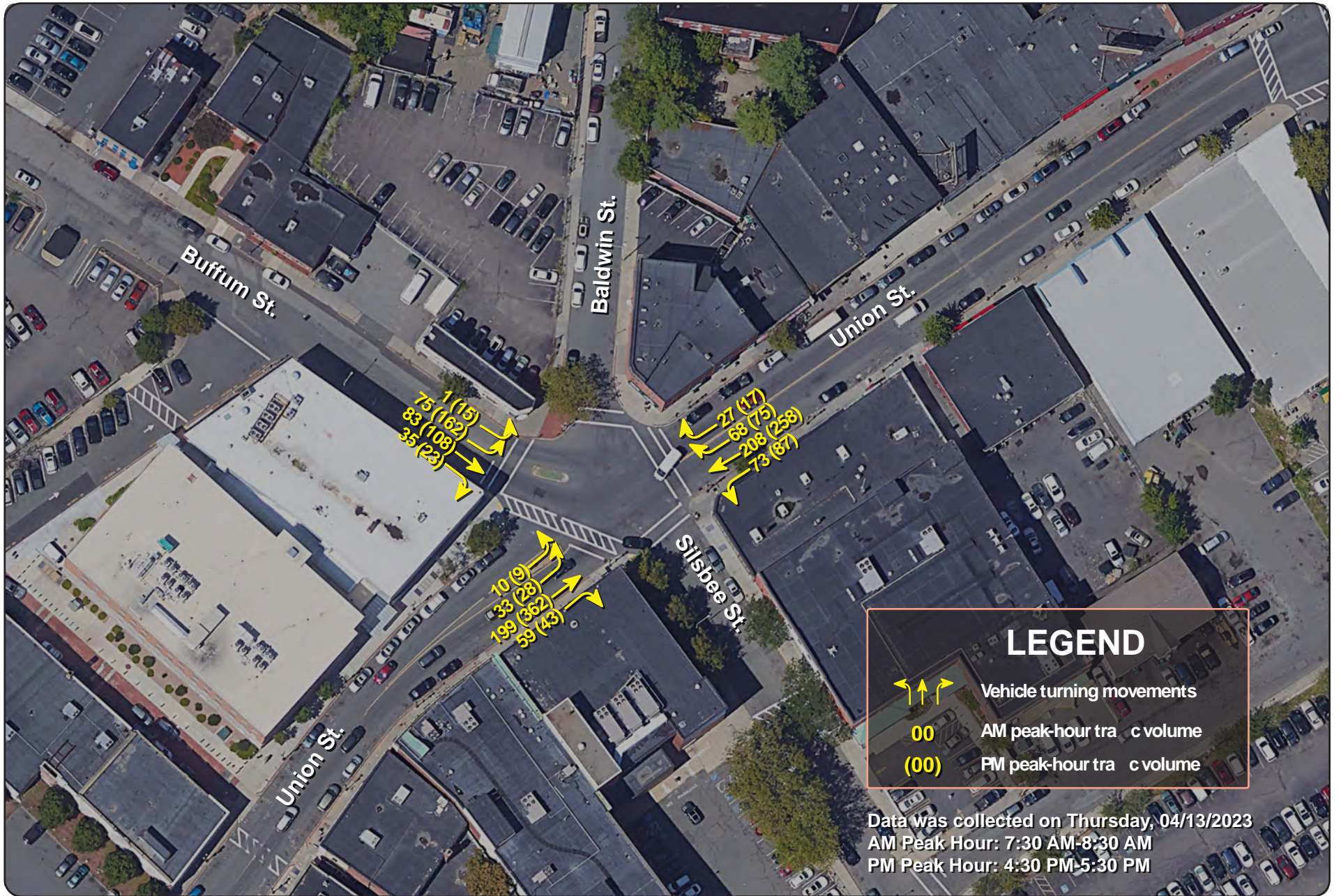


FIGURE 7
Weekday Peak-Hour Turning Movement Counts
Freeman Square in Lynn

**Table 4
Intersection Capacity Analysis
Freeman Square**

Approach	AM Delay (seconds)	AM LOS	AM Queue (feet)	PM Delay (seconds)	PM LOS	PM Queue (feet)
Existing Conditions						
Union St. NB	12.2	B	60	26.6	D	182.5
Union St. SB	14	B	7	25.5	D	175
Buffum St. EB	12	B	88	19.3	C	100
All approaches	12.8	B		24.3	C	
2030 No Build						
Union St. NB	12.3	B	57.5	35.5	E	242.5
Union St. SB	17.9	C	132.5	24.9	C	162.5
Buffum St. EB	12.2	B	42.5	22	C	122.5
All approaches	14.9	B		28.3	D	
2030 Alternative One						
Union St. NB	12.3	B	57.5	35.5	E	242.5
Union St. SB	17.9	C	132.5	24.9	C	165
Buffum St. EB	12.2	B	42.5	22	C	122.5
All approaches	14.9	B		28.3	D	
2030 Alternative Two						
Union St. NB	6.8	A	25	13.5	B	100
Union St. SB	6.3	A	50	6.1	A	50
Buffum St. EB	6.9	A	25	8.2	A	50
All approaches	6.6	A		9.6	A	

EB = eastbound. LOS = level of service. NB = northbound. SB = southbound. WB = westbound.
Source: Central Transportation Planning Staff.

6 PROPOSED SHORT-TERM IMPROVEMENTS

Based on the above analyses, MPO staff developed a series of short- and long-term improvements to address safety and operational problems at the intersections. The proposed short-term improvements generally can be implemented within a few years at a low cost. The proposed long-term improvements cover larger areas, require intensive planning and design, and require more significant funding. These improvements are analyzed in the next section.

6.1 Route 129 (Washington Street) at Hanover Street and Beacon Hill Avenue

The proposed short-term improvements are summarized below and shown in Figure 8.

- Repaint the crosswalk on Hanover Street as continental-style stripes to be consistent with the other crossings at the intersection.
- Replace the pedestrian signal heads and install ADA-accessible pedestrian push buttons at the mid-block crossing on Washington Street.
- Trim tree branches to improve visibility of the mid-block pedestrian signals.
- Extend the curb on the southern corner of the intersection (Hanover Street at Washington Street) with a painted pedestrian zone and flexible bollards or flex posts.
- Consider reducing the speed limit on Washington Street, especially in the residential section, to 25 miles per hour.
- Post speed limit signs along the Washington Street corridor.
- Prohibit parking at the approaches to increase visibility of people using crosswalks at the intersection.
- Add shared lane pavement markings on Washington Street.
- Evaluate and improve streetlights.

The proposed short-term improvements would increase safety for people using the intersection (walking, biking, driving, or using assistive mobility devices). These improvements are estimated to cost between \$20,000 and \$30,000.

6.2 Freeman Square

The proposed short-term improvements are summarized below and shown in Figure 9.

- Repaint crosswalks at the intersection to improve visibility.
- Install Manual of Uniform Traffic Control Devices (MUTCD) standard pedestrian warning signs (MUTCD W11-2) on Union Street and Buffum Street approaching the intersection.

- Prohibit parking at the approaches to increase visibility of people using crosswalks at the intersection.
- Paint pedestrian zones and install flexible bollards or flex posts to extend the curb at the following areas:
 - The corner of Union Street and Baldwin Street
 - The corner of Union Street and Silsbee Street

The short-term improvements would increase safety for people using the intersection (walking, biking, or using assistive mobility devices). The improvements are estimated to cost between \$30,000 and \$40,000.

According to the Crash Modification Factors (CMF) Clearinghouse database, curb extensions and parking prohibition near intersections reduce pedestrian crossing delays, increase driver yield rates, reduce turn speeds, and improve driver visibility of people using crosswalks at intersections. Studies have shown that implementing improvements that increase visibility of pedestrians could reduce vehicle-pedestrian crashes by as much as 40 percent.⁵

⁵ Crash Modification Factors (CMF) Clearinghouse, United States Department of Transportation, Federal Highway Administration, June 26, 2023, [CMF Clearinghouse](#)



FIGURE 8
Short-Term Improvements
Washington Street at Hanover Street/Beacon Hill Avenue in Lynn

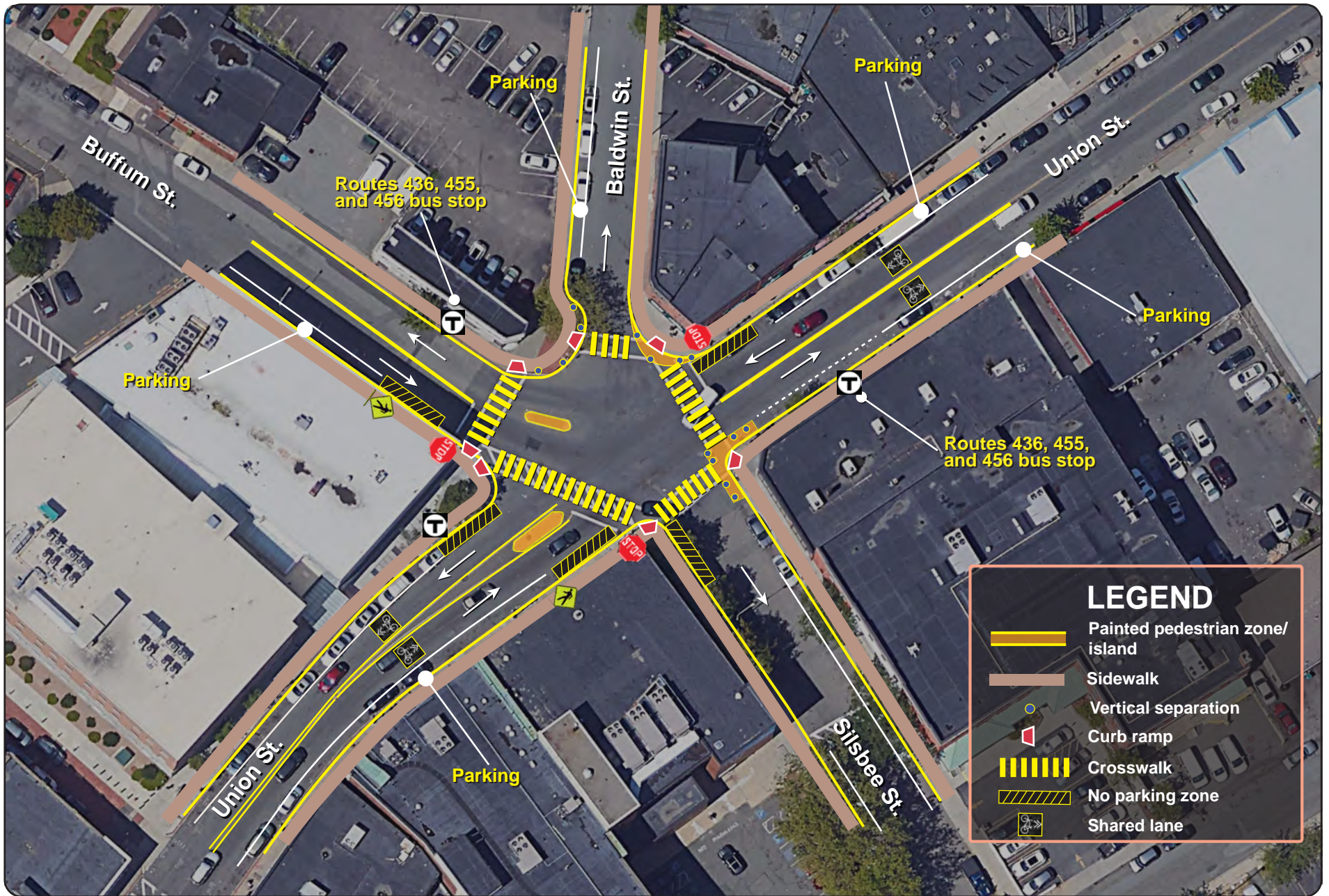


FIGURE 9
Short-Term Improvements
Freeman Square in Lynn

7 LONG-TERM IMPROVEMENT ALTERNATIVES

The proposed long-term improvements would require additional planning and design and more significant funding. Staff identified two alternatives for each intersection, based on the goals of maximizing safety and operational benefits for all transportation modes and minimizing construction impacts.

Staff also analyzed traffic operations for the alternatives and the base case (no-build scenario) under projected 2030 traffic conditions. For comparison purposes, the analysis included future-year no-build scenarios for each intersection that contain no geometric modifications and no changes to intersection controls (included in Tables 3 and 4). Future-year no build Synchro analyses for each intersection can be found in Appendix G.

Key elements of the two alternatives for each intersection are summarized below. Route 129 at Hanover Street and Beacon Hill Avenue future-year Synchro analyses for Alternatives One and Two can be found in Appendix H. Freeman Square future-year Synchro analyses for Alternatives One and Two can be found in Appendix I.

7.1 Route 129 (Washington Street) at Hanover Street and Beacon Hill Avenue

Alternative One

Alternative One would change the intersection control to an all-way stop. It also includes geometric modifications to the right-of-way. Figure 10 illustrates these changes. Key elements of the alternative include the following:

- Removing the overhead flashing red and flashing yellow signals and installing stop signs on each approach
- Painting stop bars on the Washington Street approaches
- Repainting each crosswalk to standard continental, ladder, or zebra-style markings to aid in visibility
- Making upgrades to the existing mid-block crossing on Washington Street, including the following:
 - Signal heads with retroreflective backplates
 - Checking timings for appropriate length
 - Installing ADA-accessible push-buttons
 - Raising the crossing to aid in visibility⁶
- Tightening the turning radii with curb extensions
- Removing parking close to the intersection to improve safety and visibility of people walking

⁶ National Association of City Transportation Officials guidance on mid-block crossings: <https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/crosswalks-and-crossings/midblock-crosswalks/>

- Installing ADA-compliant curb ramps (two per corner), eight per intersection
- Improving street lighting
- Adding bus shelters to the Washington Street stops
- Adding shared lane pavement markings on Washington Street (existing right-of-way with on-street parking does not have space for separated bike lanes)

The improvements in Alternative One would increase safety for people using the intersection. The improvements are estimated to cost between \$50,000 and \$60,000. According to the CMF Clearinghouse database, converting a two-way stop-controlled intersection into an all-way stop-controlled intersection could reduce crashes by as much as 80 percent.

Alternative Two

Alternative Two would change the intersection control to a traffic signal that controls the flow of vehicles and provides sufficient time for safe and efficient pedestrian crossings. Existing conditions at the intersection of Washington Street and Hanover Street/Beacon Hill Avenue satisfy two of the warrants. Geometric modifications to the right-of-way are the same as in Alternative One. Figure 11 illustrates the changes listed below. Key elements of the alternative include the following:

- Upgrading the flashing signals to standard three-bulb signal heads with retroreflective backplates
- Painting stop bars on the Washington Street approaches
- Repainting each crosswalk to standard continental, ladder, or zebra-style markings to aid in visibility
- Installing ADA-compliant curb ramps (two per corner), eight per intersection
- Removing the mid-block signal and crosswalk
- Tightening the turning radii with curb extensions
- Removing parking close to the intersection to improve safety and visibility of people walking
- Adding bus shelters to the Washington Street stops
- Improving street lighting

According to the CMF database, the improvements in Alternative Two would increase safety for people using the intersection by as much as 44 percent. The improvements are estimated to cost between \$1.2 million and \$1.5 million. The results presented in Table 3 indicate that Alternative Two produces less delay during the morning and evening peak hours than Alternative One.

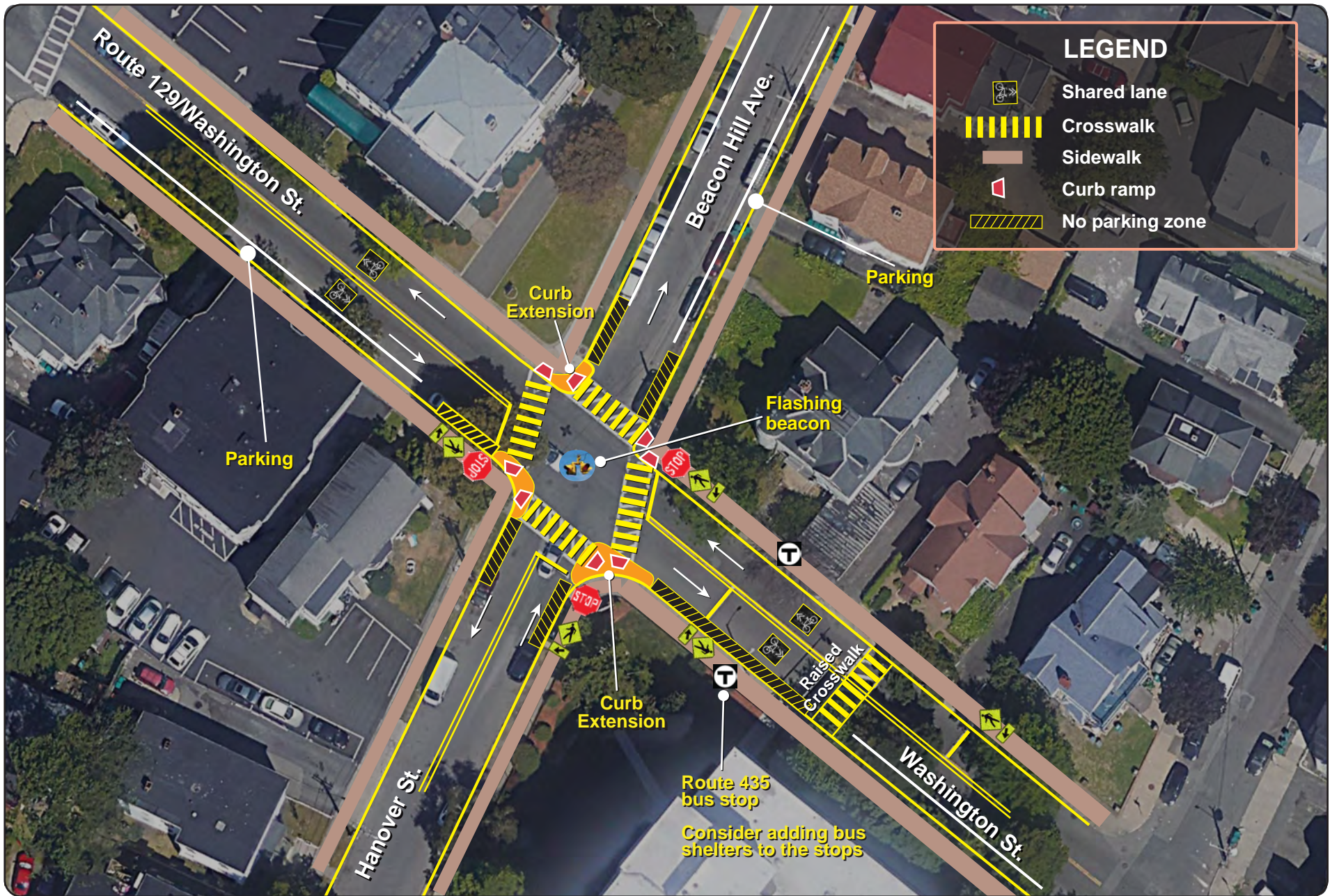


FIGURE 10
Alternative One: Pedestrian Safety Enhancements
Washington Street at Hanover Street/Beacon Hill Avenue in Lynn

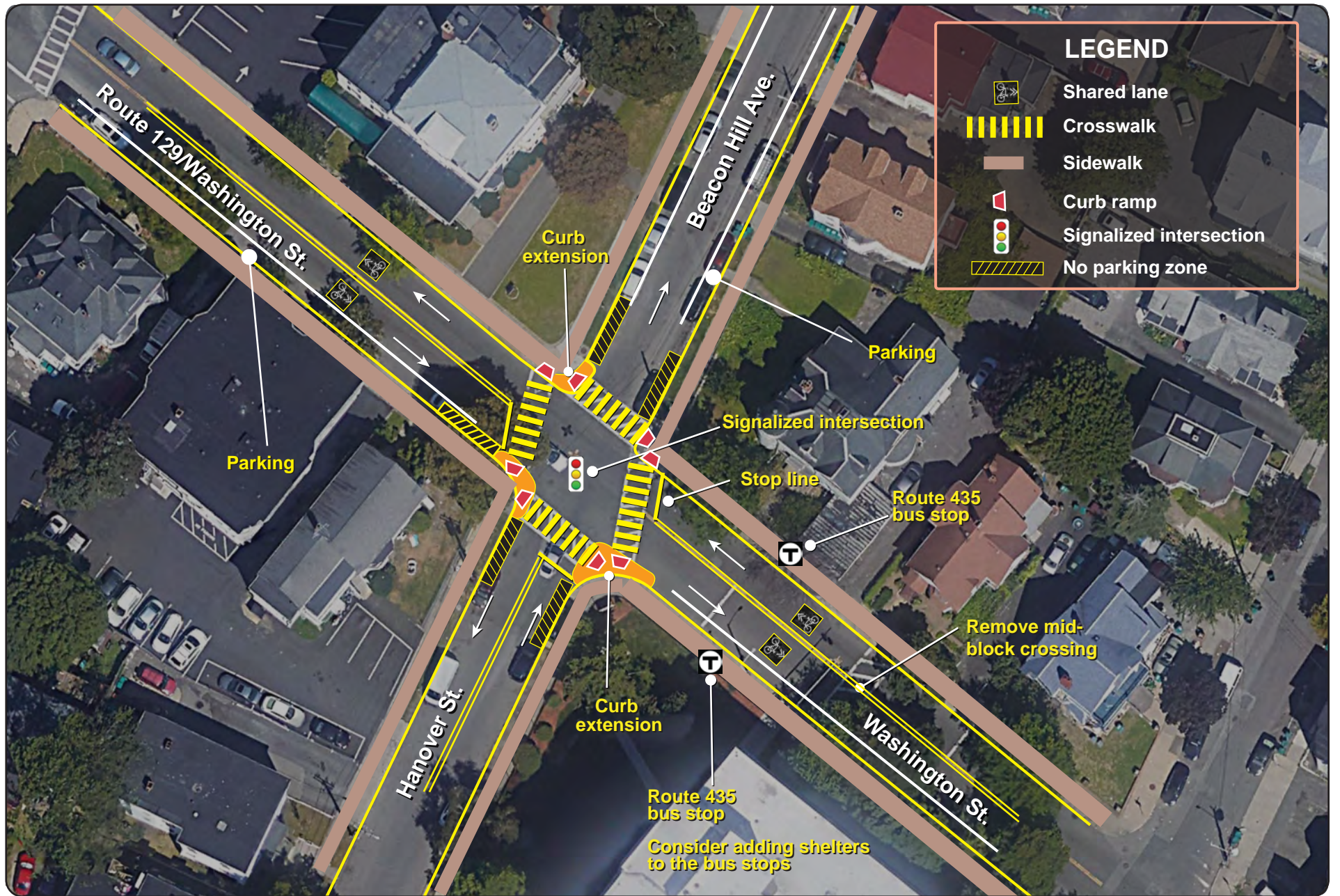


FIGURE 11
Alternative Two: Signalized Intersection
Washington Street at Hanover Street/Beacon Hill Avenue in Lynn

7.2 Freeman Square

Alternative One

Alternative One for the Freeman Square intersection would keep the intersection control the same but add geometric modifications to the right-of-way, in addition to other installations, to promote safer travel through the intersection. Figure 12 displays the geometric changes listed below. Key elements of the alternative include the following:

- Repaint crosswalks to continental, ladder, or zebra-style markings
- Install MUTCD standard pedestrian warning signs (MUTCD W11-2) on Union Street and Buffum Street approaching the intersection
- Reinforce the existing island at Buffum Street
- Reinforce and extend the median on Union Street into the crosswalk to provide a pedestrian refuge
- Add shared-lane pavement markings on Union Street (existing right-of-way with on-street parking does not have space for separated bike lanes)
- Install curb extension to extend the curb at
 - The corner of Union Street and Baldwin Street
 - The corner of Union Street and Silsbee Street
- Consider adding bus shelters with benches to the Union Street stops at Silsbee Street and Buffum Street
- Improve street lighting

The improvements in Alternative One would increase safety for people using the intersection and enhance bus stop amenities. The improvements are estimated to cost between \$70,000 and \$80,000. The CMF database indicates that the pedestrian visibility enhancements could reduce crashes by as much as 40 percent.

Silsbee Street (Two-Way, Two-Lane) Option

Silsbee Street is currently a one-way street that carries traffic eastbound out of the intersection. Its pavement width from curb to curb is about 32 feet and there is on-street parking on both sides. Converting it into a two-way, two-lane operation will improve connections to the commuter rail station.

Analysis indicates that two-way, two-lane traffic may be feasible if parking is allowed on only one side of the street. This would allow space for two ten-foot travel lanes, pavement striping, and an eight-foot on-street parking area on one side. However, additional evaluation on how much traffic this conversion would divert through the intersection and its impact on traffic safety and operations is necessary. This evaluation is beyond the scope of this study.

Alternative Two

Alternative Two for the Freeman Square intersection would modify the intersection to a small roundabout, changing the geometry and control of the existing intersection. A 30-foot central island with painted or raised truck apron and a 17-foot circulating lane would fit the existing space. Figure 13 illustrates the changes described below. Key elements of the alternative include the following:

- Install a roundabout at the intersection, while keeping the current operation of each street the same—two-ways and one-ways will not change
- Install MUTCD standard pedestrian warning signs (MUTCD W11-2) on Union Street and Buffum Street approaching the intersection
- Install MUTCD standard yield signs on Union Street and Buffum Street approaching the roundabout/traffic circle
- Add shared-lane pavement markings on Union Street to accommodate people who bike (existing right-of-way with on-street parking does not have space for separated bike lanes)
- Consider adding a curb extension at the corner of Union Street and Silsbee Street
- Consider adding bus shelters with benches to the Union Street stops at Silsbee Street and Buffum Street
- Evaluate and improve street lighting

The improvements in Alternative Two would increase safety for people using the intersection and enhance bus stop amenities. Roundabouts have proved effective in reducing traffic speeds, crash frequency and severity, traffic delays, and long-term operational costs. In addition, they are environmentally friendly and more aesthetically pleasing with landscaping improvements. This small roundabout retrofit is estimated to cost approximately \$500,000. The CMF database indicates that retrofitting an intersection with a roundabout could reduce crashes by as much as 44 percent.

The results presented in Table 4 show that Alternatives One and Two produce acceptable delays and LOS during the morning and evening peak hours. However, Alternative Two produces less delay during the morning and evening peak hours than Alternative One. Alternative Two would reduce travel speeds and crash severity and provide a welcoming environment at Freeman Square.

Staff submitted this memorandum to stakeholders for comments on the short- and long-term alternatives. Comments received from stakeholders are included in Appendix J.

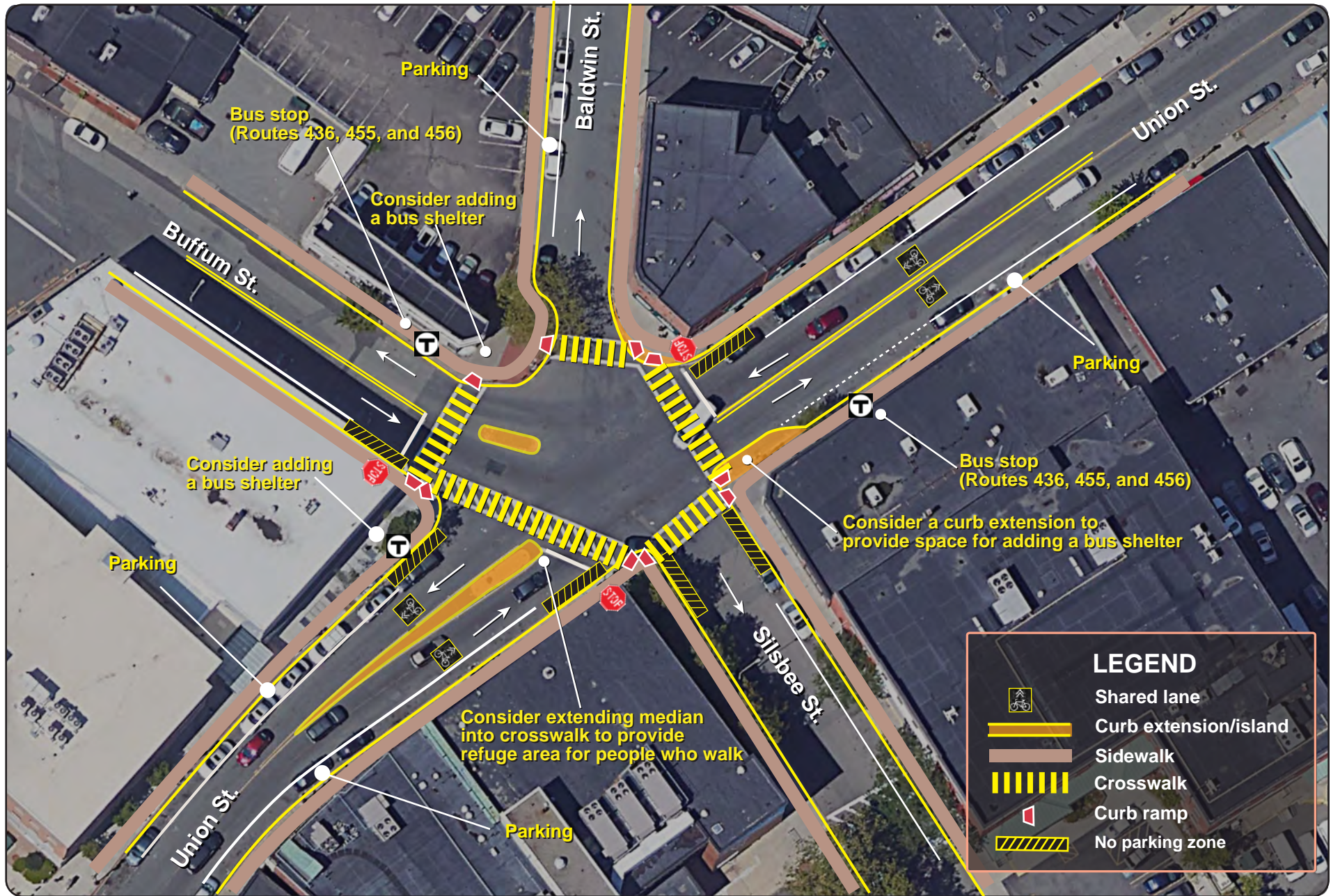


FIGURE 12
Alternative One
Freeman Square in Lynn



FIGURE 13
Alternative Two: Roundabout/Traffic Circle
Freeman Square in Lynn

8 RECOMMENDATIONS

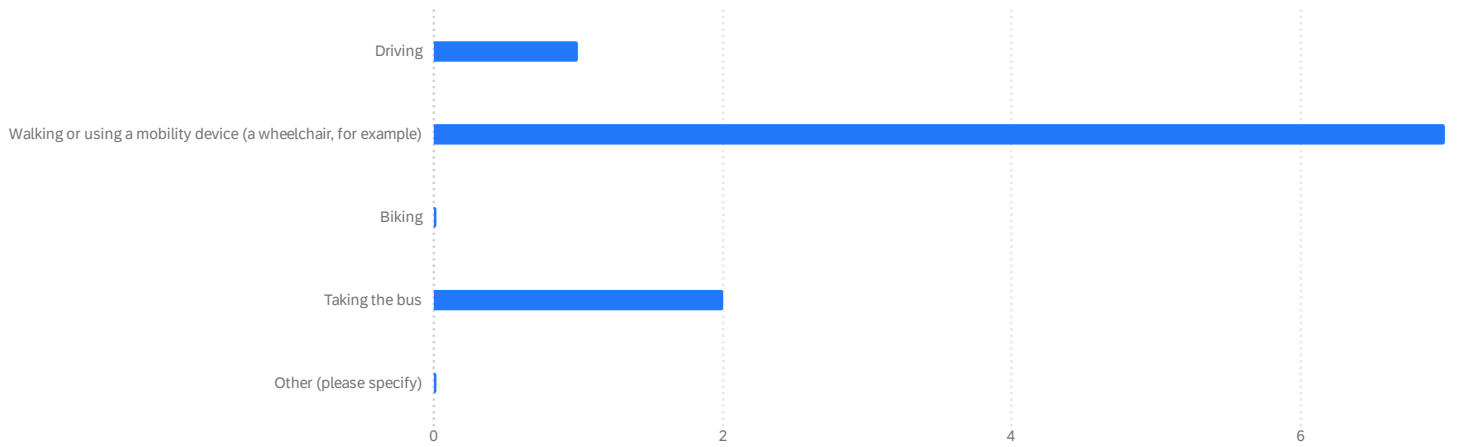
This study performed a series of safety and operations analyses, identified issues and concerns, and proposed short- and long-term improvements at the intersections. The proposed short-term improvements would enhance safety and operations for the intersections under the existing conditions. The proposed long-term improvements—such as signalizing or retrofitting an intersection with a roundabout; adding ADA-compliant curb ramps; adding necessary curb extensions; installing bus shelters; improving streetlights; and improving infrastructure for people who walk, bike, or use assistive mobility devices—would significantly address the safety and operational problems at the intersections.

At this preliminary planning stage, staff recommend that all proposed alternatives should be included and further investigated at the functional design stage. With a relatively high benefit/cost ratio, they should be implemented as resources are available from highway maintenance or local Chapter 90 funding or through Shared Streets and Spaces grants.

The City of Lynn has jurisdiction of the intersections and roadways in the study area and is responsible for renovation of the intersections to improve safety, mobility, connectivity, and operations. This study gives the City an opportunity to address the needs of the intersection and plan for design and engineering. The next steps would be to select the preferred alternative that is sensitive to the goals and needs of stakeholders and advance the project through the planning process. These steps will depend upon cooperation between MassDOT, the City, and the MPO to begin the project notification and review process and complete the project initiation form. After completing the initial steps, City and MassDOT staff can start preliminary design and engineering to place the project in the Boston Region MPO’s Transportation Improvement Program.

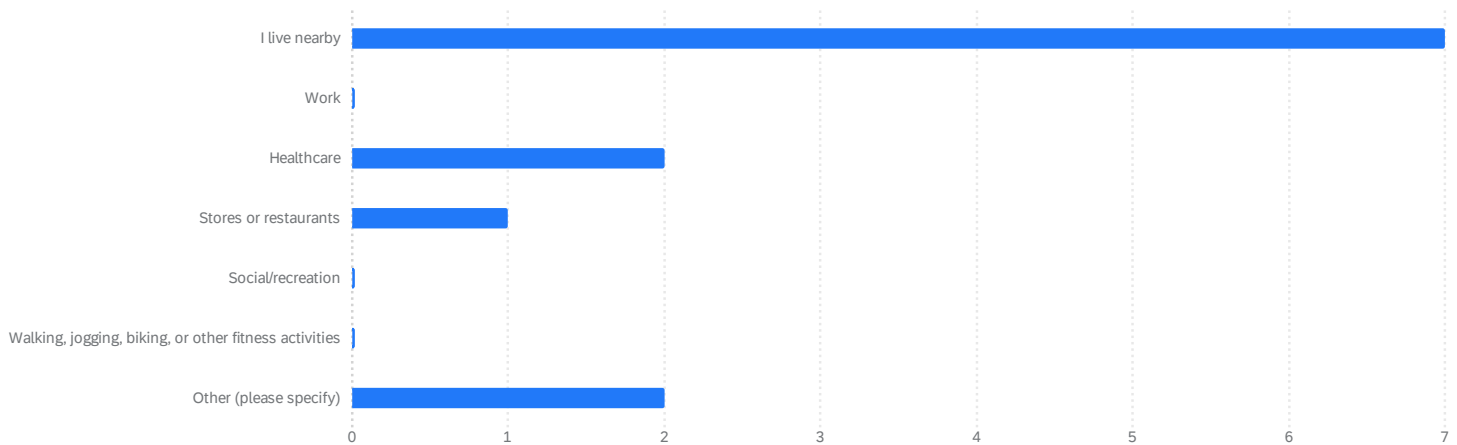
Appendix A: Survey Questions and Responses

How do you usually travel through the intersection? Check all that apply. 8 ⓘ



No data found - your filters may be too exclusive!

Why do you typically visit or travel through this intersection? Check all that apply. 8 ⓘ



Post office

As mi ruta diaria

Very safe, kind drivers

no camino mucho aqui, vivo cerca, me parece más o menos seguro

very unsafe - i was hit in the intersection a couple years ago - in the crosswalk, the lights were working, someone ran into me

don't feel safe at all. there are a lot of cars that bump up / almost

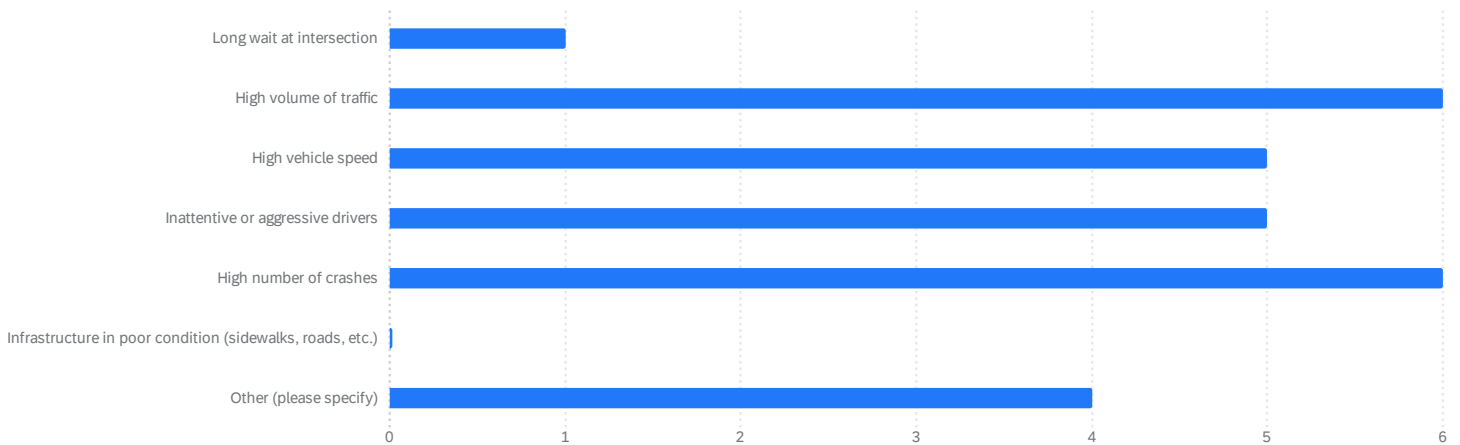
Hay mucha imprudencia. Me siento inseguro

very unsafe - it's always dangerous.

necesito tener mucho cuidado cruzando - los carros no paran para los peatones, ni por la gente cruzando ni por la luz (walking sign/red light)

fairly easy because i've gotten used to it but drivers and high vehicle speeds are unsafe. know several people who've been hit or in accidents

What problems do you encounter while traveling through the intersection? Check all that apply. 8 ⓘ



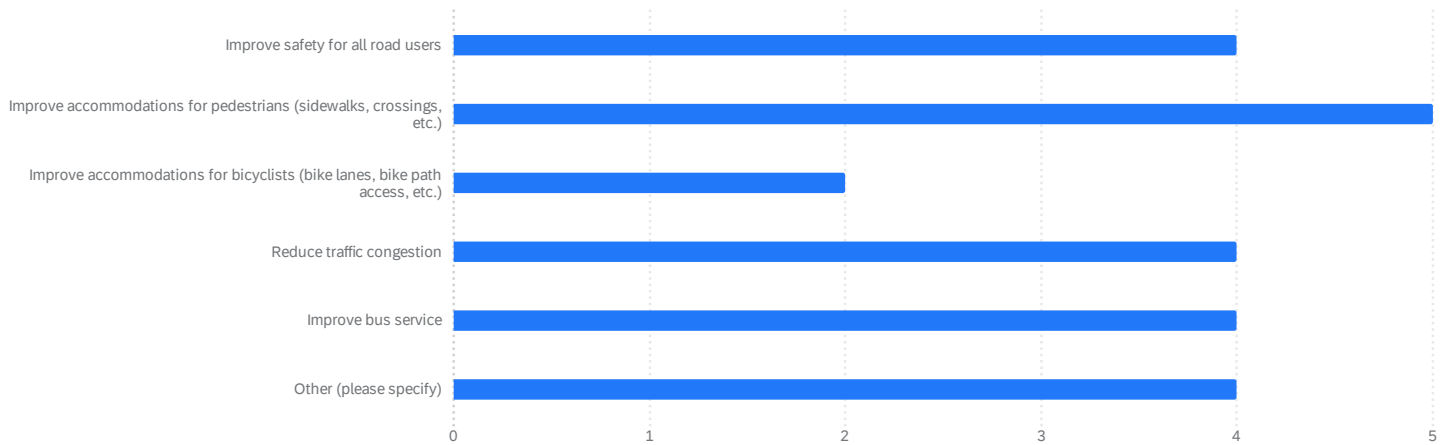
nada

worried that cars won't stop / have observed that they don't stop

Los conductores son imprudentes y no respetan Las normas de trafico

blind spots for turning/crossing

What improvements would you like to see implemented at the intersection? Check all that apply. 8 ⓘ



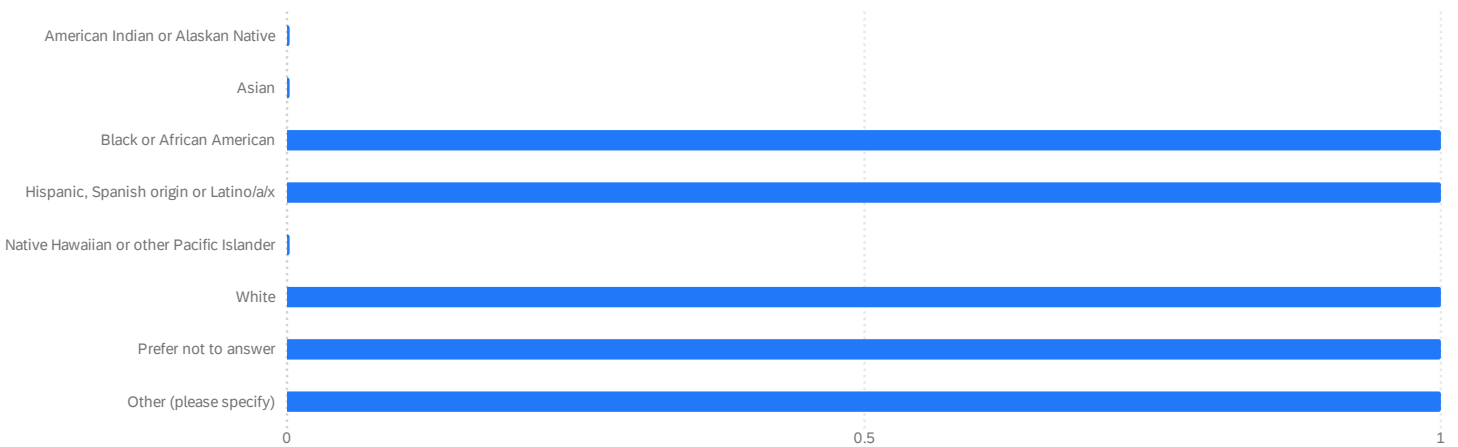
bus shelter, enforce pedestrian rights of way in the crossings, put "elderly crossing" signs up (lots of elderly in the Barrett residences)

crossing guard; washington light should be up at the intersection, and there should be a light with crosswalk on hanover as well by the residences

crossing guard, full signal light (not just blinking red)

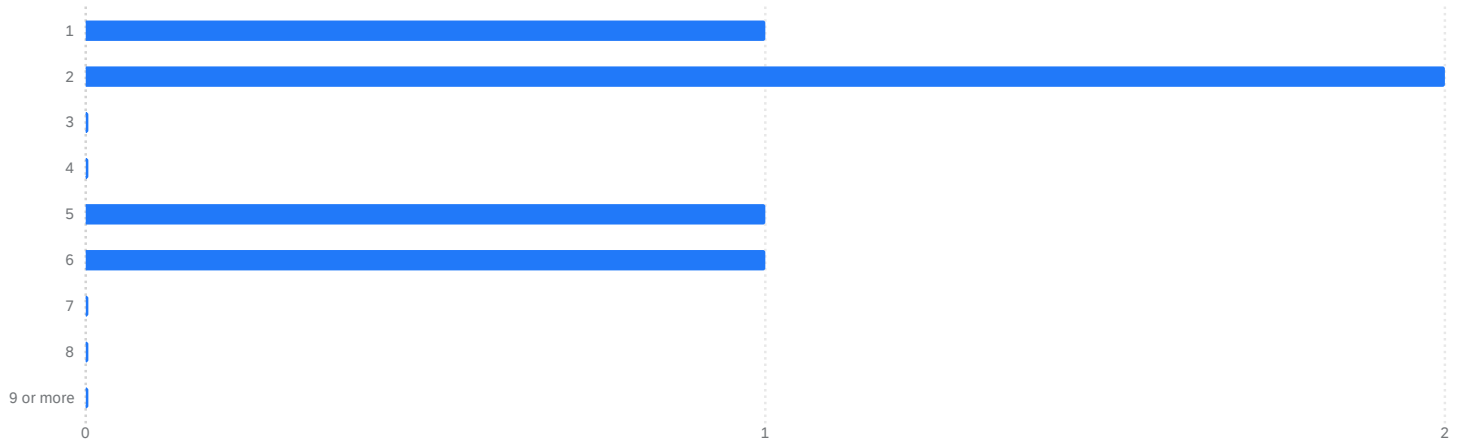
Hanover coming into the intersection should either be 1 way or wider. the crossing light on washington by the residences should be moved right up to the intersection- lots of kids coming from school run though.

How do you self-identify by race and/or ethnicity? (Check all that apply.) 5 ⓘ

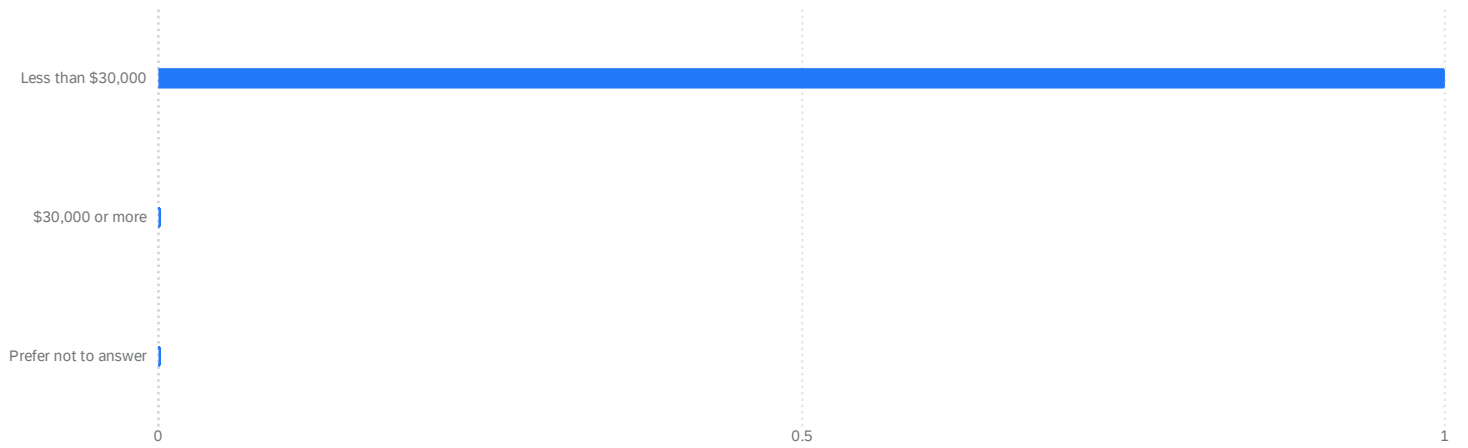


american

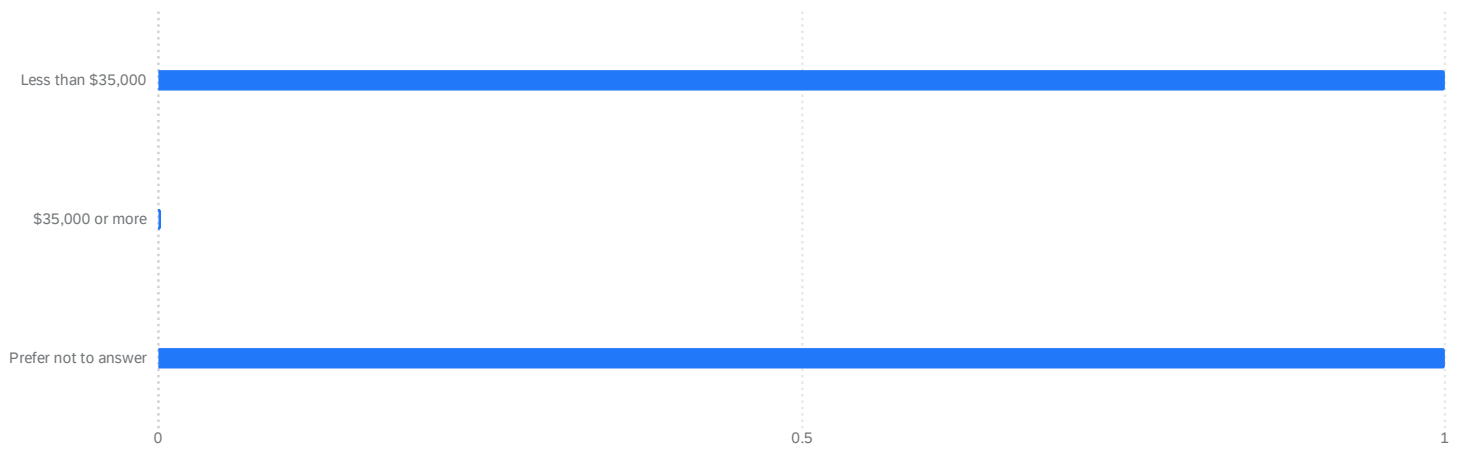
How many people are in your household? Include yourself. 5 ⓘ



What is your annual household income? 1 ⓘ



What is your annual household income? 2 ⓘ



What is your annual household income? ⓘ

Less than \$45,000 |

\$45,000 or more |

Prefer not to answer |

What is your annual household income? ⓘ

Less than \$55,000 |

\$55,000 or more |

Prefer not to answer |

What is your annual household income? 1 ⓘ

Less than \$65,000

\$65,000 or more

Prefer not to answer

0

0.5

1

What is your annual household income? 1 ⓘ

Less than \$75,000

\$75,000 or more

Prefer not to answer

0

0.5

1

What is your annual household income? ⓘ

Less than \$85,000

\$85,000 or more

Prefer not to answer

What is your annual household income? ⓘ

Less than \$95,000

\$95,000 or more

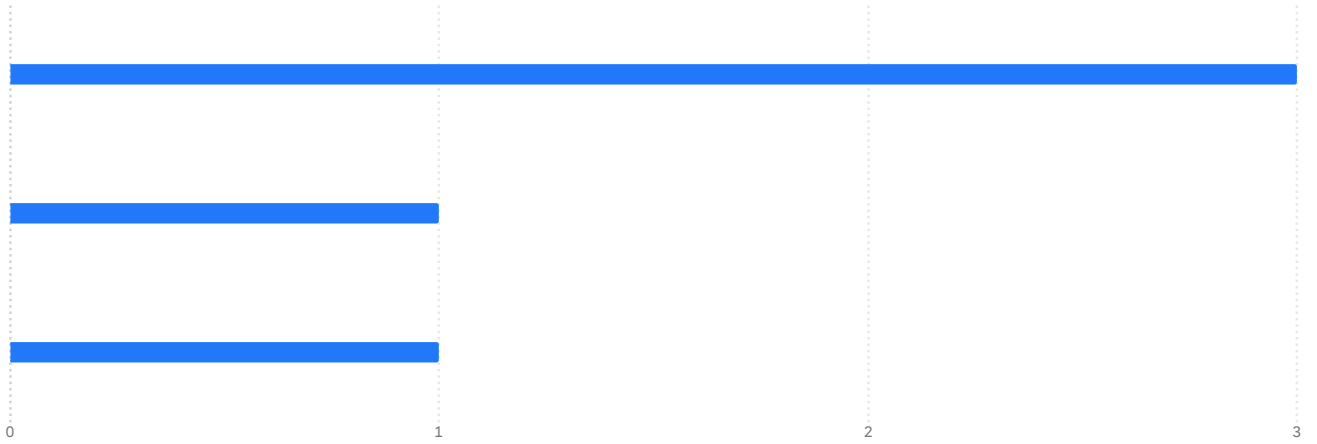
Prefer not to answer

What is your annual household income? ⓘ

Less than \$110,000
\$110,000 or more
Prefer not to answer

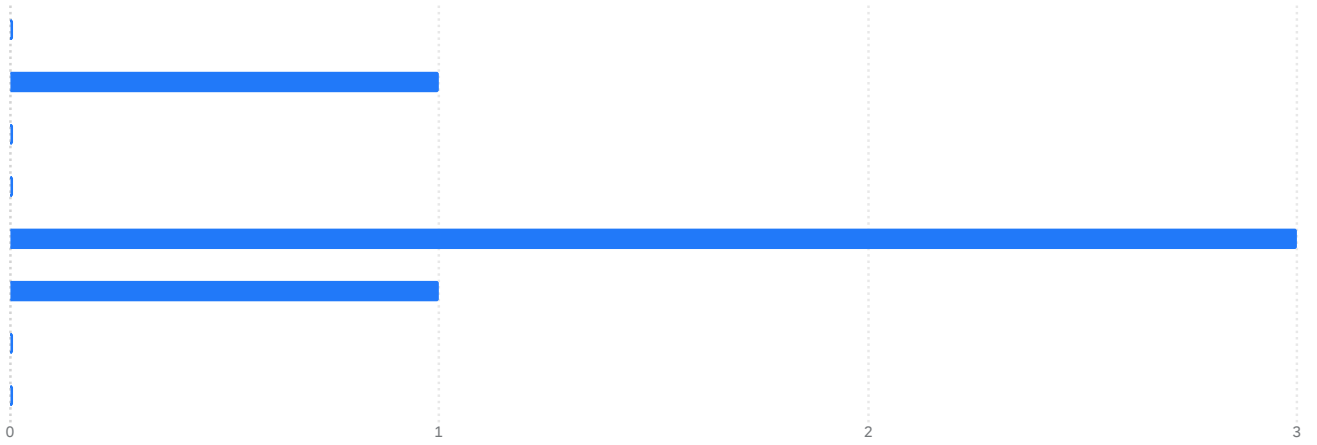
Do you have a disability? 5 ⓘ

Yes
No
Prefer not to answer

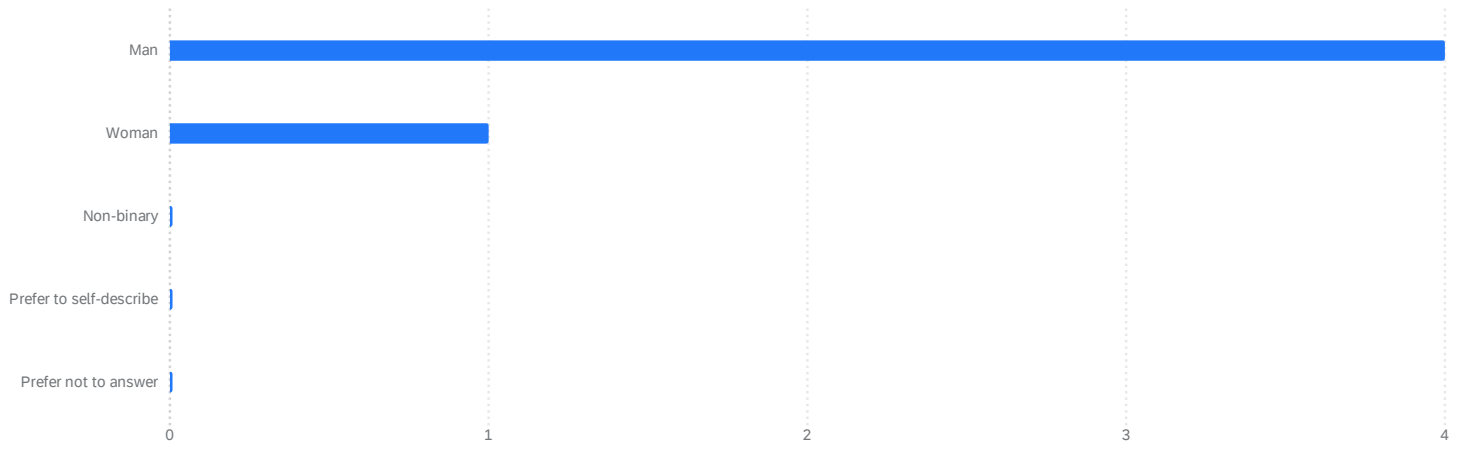


What is your age? 5 ⓘ

Under 18
18 - 21
22 - 34
35 - 44
45 - 64
65 - 74
75 and older
Prefer not to answer



How do you identify by gender? 5 ⓘ



No data found - your filters may be too exclusive!

01901

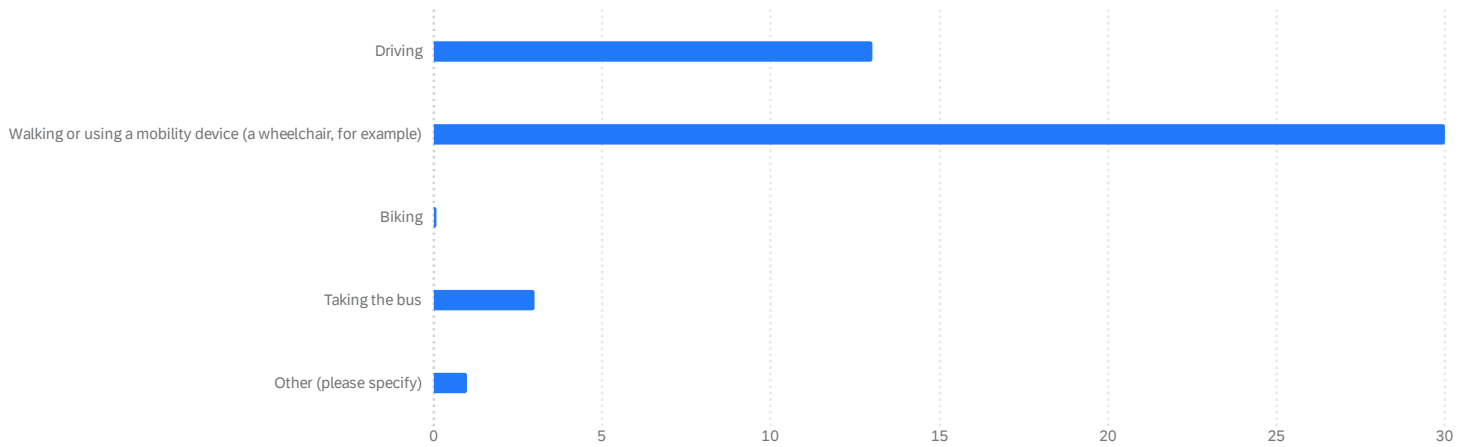
01902

01902

01902

01902

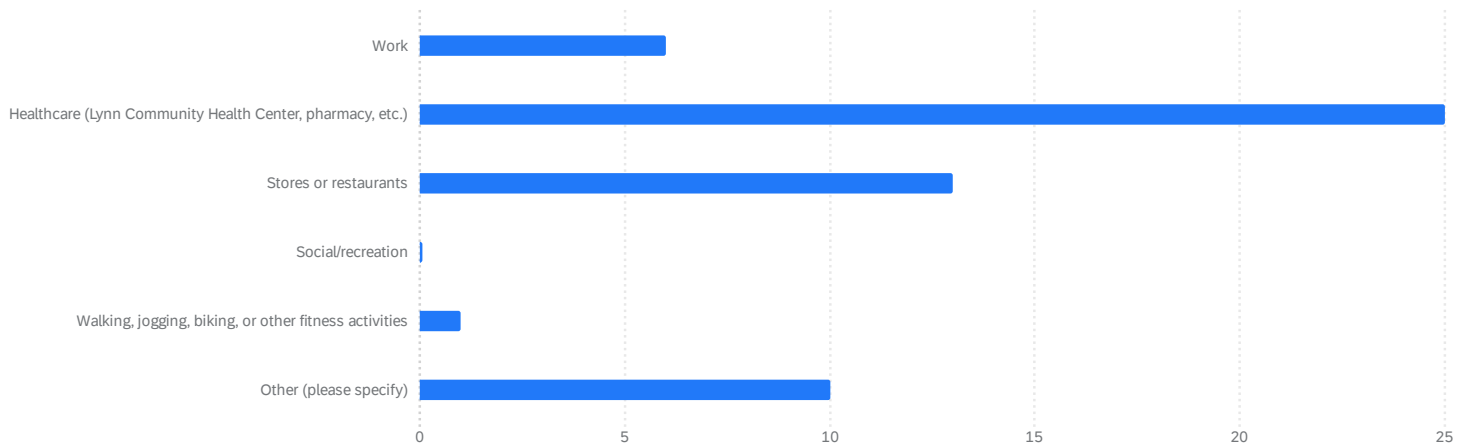
How do you usually travel through the intersection? Check all that apply. 35 ⓘ



How do you usually travel through the intersection? Check all that apply.: Other (please specify) ⓘ

Uber

Why do you typically visit Freeman Square? Check all that apply. 35 ⓘ



Why do you typically visit Freeman Square? Check all that apply.: Other (please specify) ⓘ

Brothers table

Gov services

Live here

Vivo aqui

Meet family

Live nearby

Vivo cerca

Vivian aqui y conosco el area

Vivo aqui

N/A

How safe do you feel when traveling through/crossing Freeman Square? ⓘ

Los carros se paran y me dejan pasar

No tan seguro porque tengo que tener mucha atencion a Los carros

Seguro pero parking is the problem,

Most of the time it's fine but sometimes is chaotic.

Safe

Bien

Fairly safe

Seguro

Muy inseguro as duro para Los peatones y en am carro

No seguro muy peligroso. Esposo tuvo in accident

Unsafe because the crosswalks are weird

Las personas no miren bien. No paran. As peligroso.

Very unsafe crossing anywhere

Not very safe people are impatient confused

Driving is very dangerous, people don't observe right of way, people don't start, elderly crossing alot

Unsafe crossing, light at intersection, railing for sidewalk, too much going on

No se porque mi esposo o mis hijos me traen en carro

Me da panico por mi y cuando veo a otros cruzar

Me siento segura

Very unsafe driving. No respect for right of way

Not very safe

Not very safe both driving and walking . People walk out when cars are in motion. Cars don't observe right of way and just try to go first.

Cars usually stop but don't really respect the stop signs

80 percent safe

Insegura. Tengo qua esperar mi turno

No muy segura . Veo muy bien el trafico y espero mi turno

Have no choice so must go through it

Unsafe crosswalks are too long

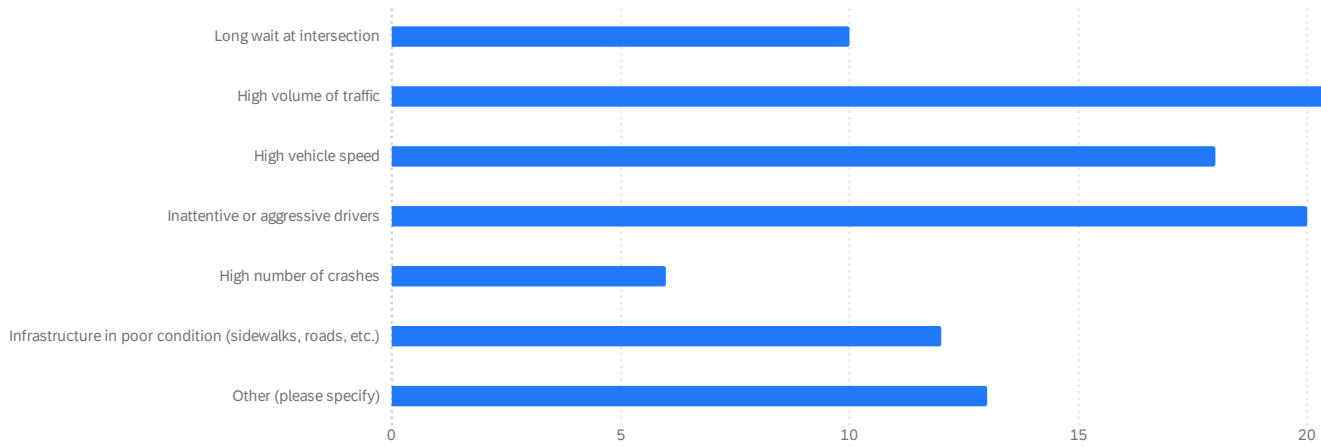
Tengo qua estar pendiente de todas Las calles y del rayado antes de cruzar. Yo sigo lo rayado blanco para saber donde cruzar seguramente

Safe

Not at all

Relatively safe; concerns about crossing and people stopping

What problems do you encounter while traveling through the intersection? Check all that apply. 35 ⓘ



What problems do you encounter while traveling through the intersection? Check all that apply.: Other (please specify) ⓘ

No hay bien forma de cruzar por los peatones

Litter

Nada

Peligroso por los niños

Crosswalks too long

Near missed, more markings

Desorganización y ascender en mal estado

Have almost been hit with my son in a stroller

Distracted drivers on phone at crossings

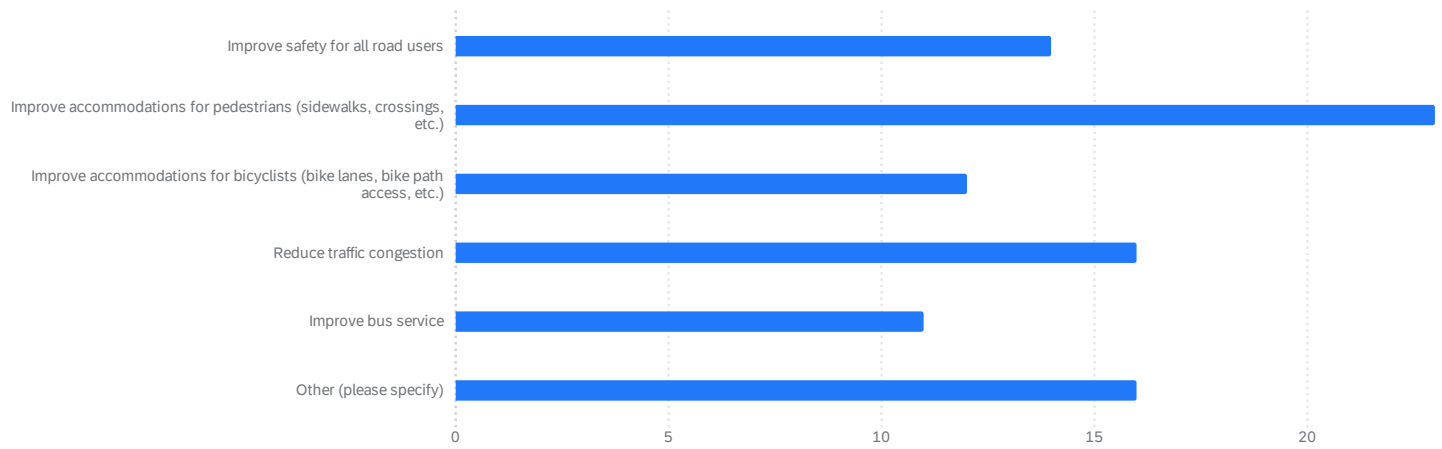
Have seen people traveling the wrong way down one way nearby. And cars blocking the crosswalks

Cars compete to go first and don't stop

Choferes no son corteses con los peatones

Lights dim at night

What improvements would you like to see implemented at the intersection? Check all that apply. 33 ⓘ



What improvements would you like to see implemented at the intersection? Check all that apply.: Other (please specify) ⓘ

Nada

Increase driver awareness. Don't put a light . Make silsbee st a 2 way to reduce confusion and accidents

Ped crossing lights

Enforcement. Double parking is a pain and should be stopped and bigger places should have loading zones. Avoid having larger vehicles parking right in the intersection.

Nada

Muchos acercas y no son muy visibles

Slowing traffic

Bajar la velocidad de Los vehiculos.

Lights. More police enforcement for traffic violations

Rotary

Mas flores y arboles, mejor señalizacion y camaras

No se

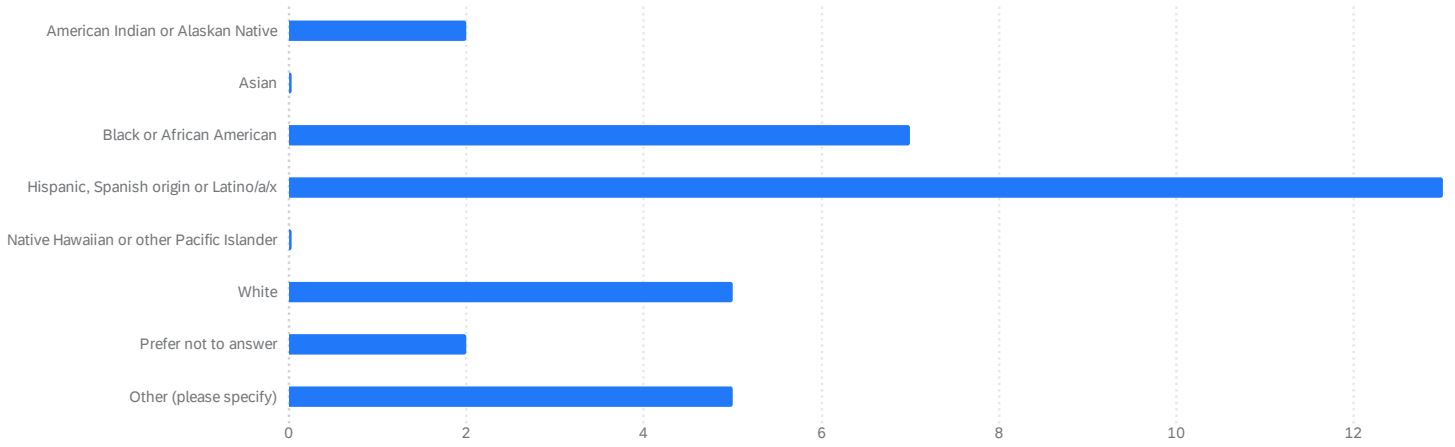
Stop signs not visible enough. Some kind of light system. Also bus frequency should be improved.

Make better crossings, have speed signs flashing for drivers to slow down

Traffic. Light

Vehicles pay more attention to crossings, designated safe drop off zones for lyft drivers

How do you self-identify by race and/or ethnicity? (Check all that apply.) 31 ⓘ



How do you self-identify by race and/or ethnicity? (Check all that apply.): Other (please specify) ⓘ

Human

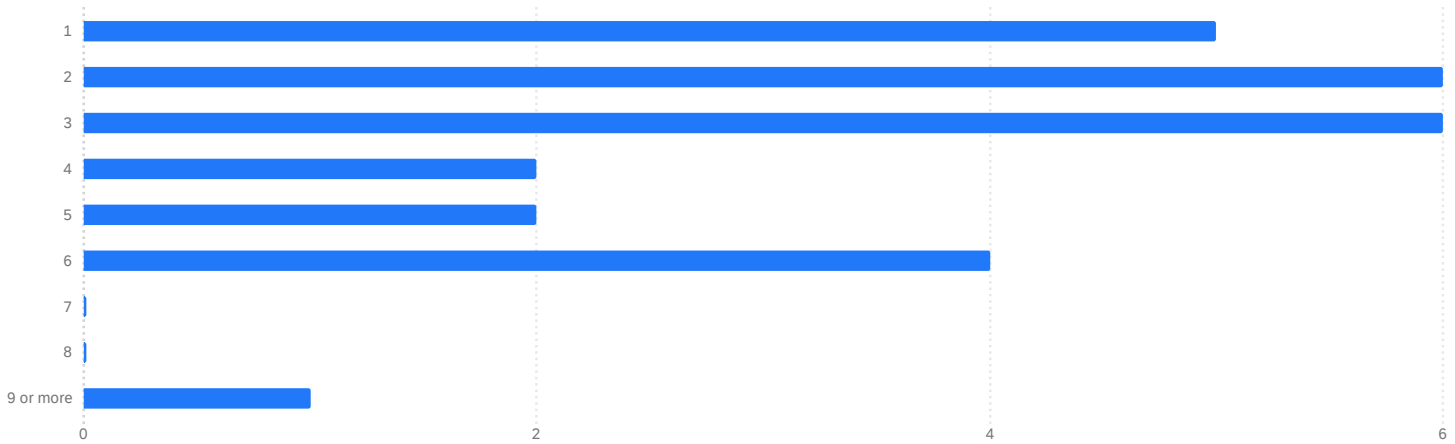
American

Lots

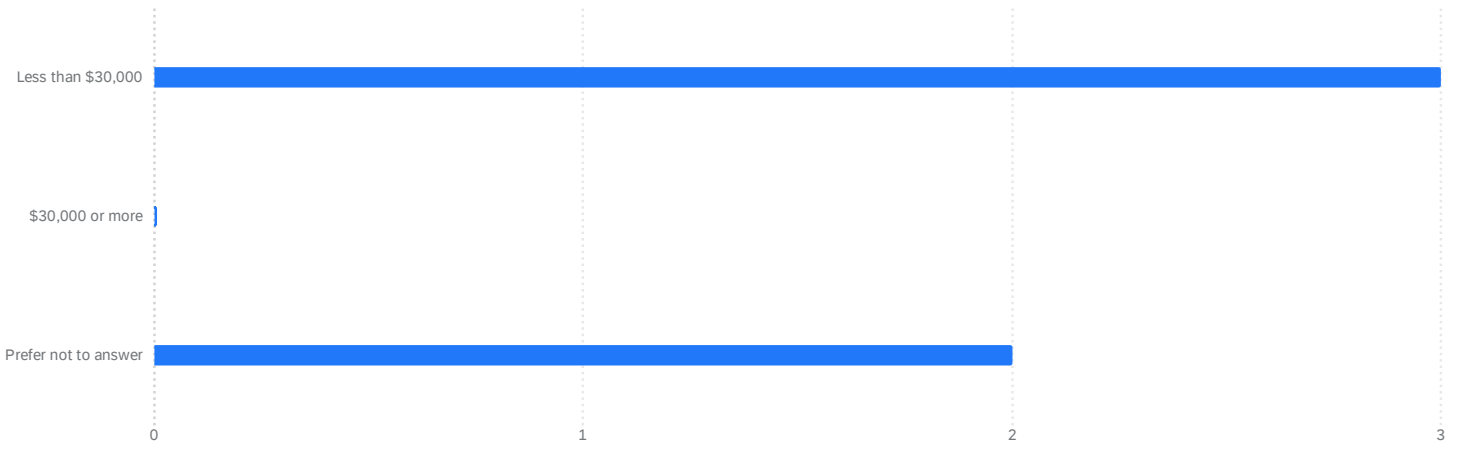
Haitian

Haitian Native

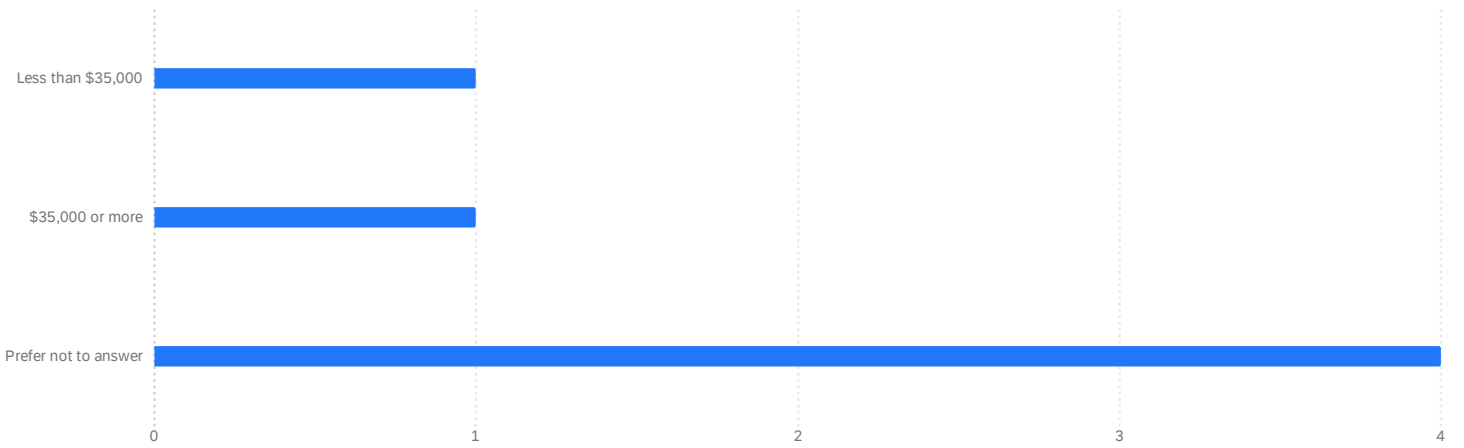
How many people are in your household? Include yourself. 26 ⓘ



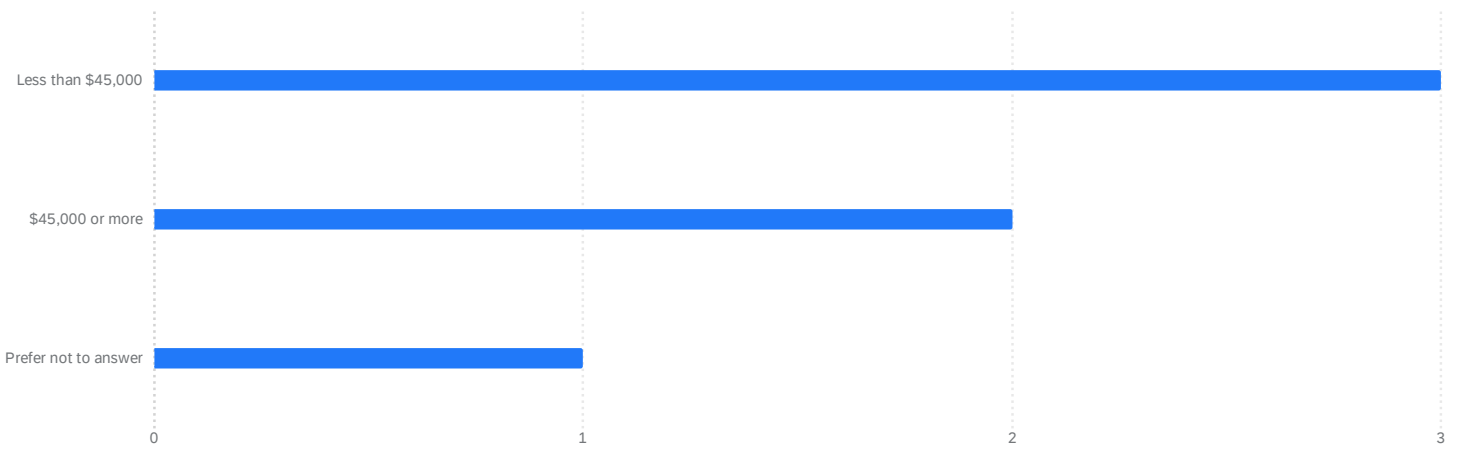
What is your annual household income? 5 ⓘ



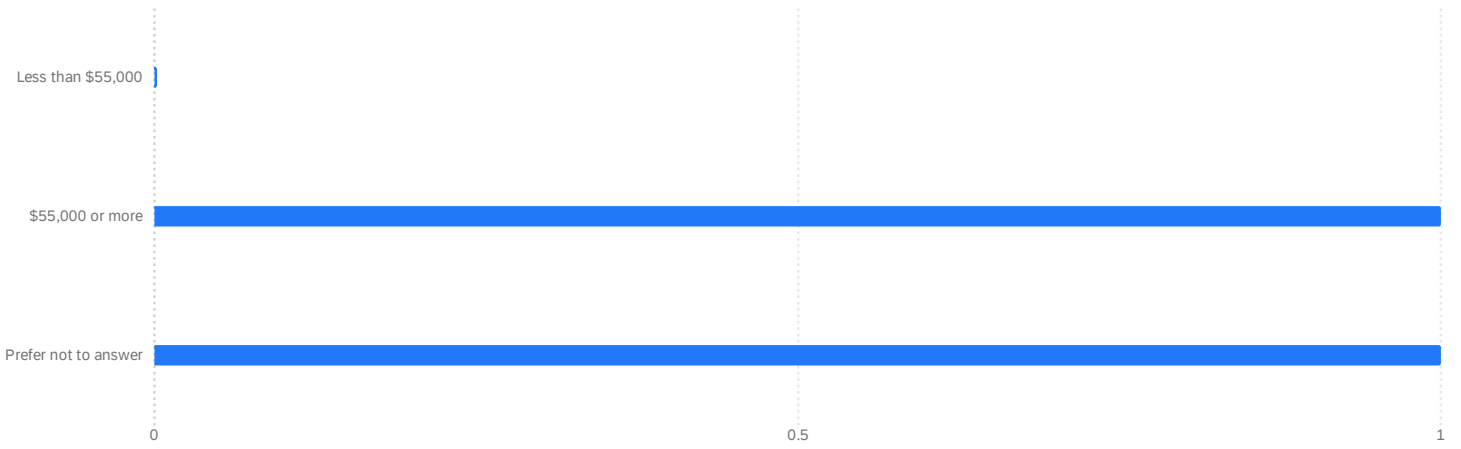
What is your annual household income? 6 ⓘ



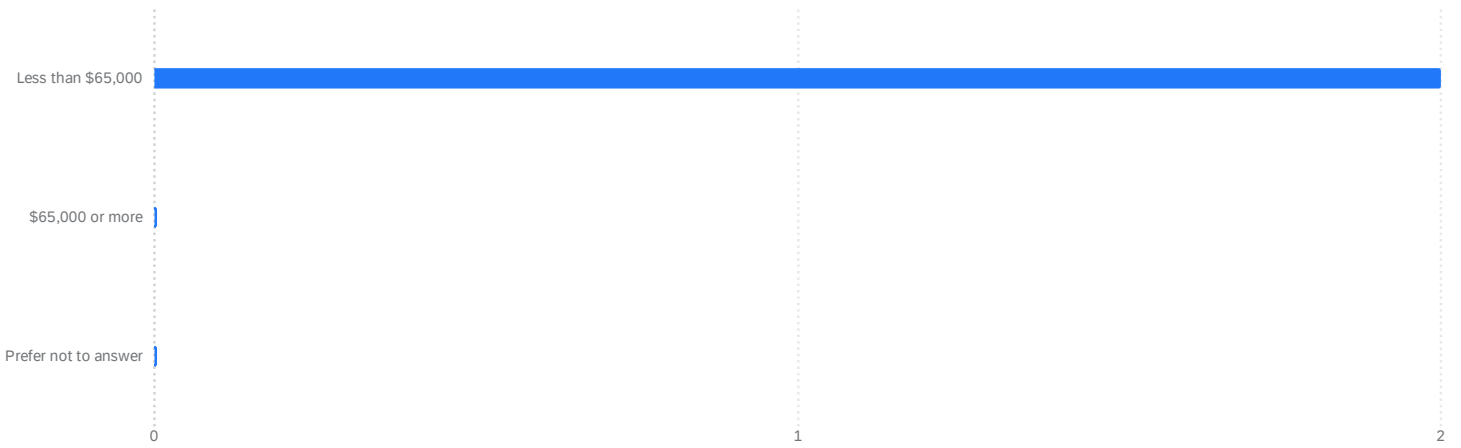
What is your annual household income? 6 ⓘ



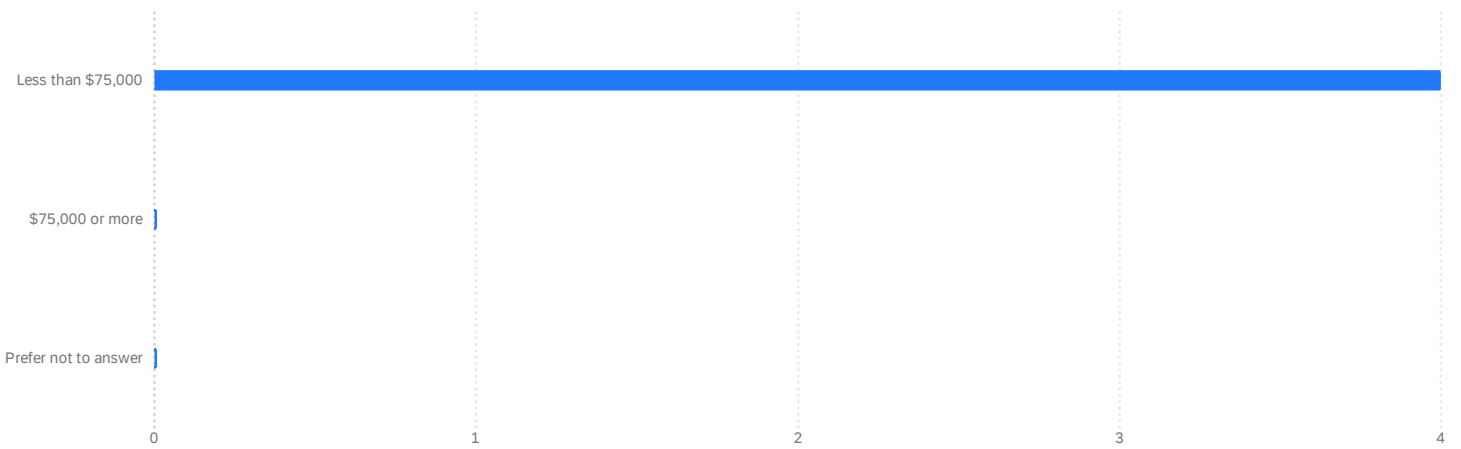
What is your annual household income? 2 ⓘ



What is your annual household income? 2 ⓘ



What is your annual household income? 4 ⓘ



What is your annual household income? ⓘ

Less than \$85,000

\$85,000 or more

Prefer not to answer

What is your annual household income? ⓘ

Less than \$95,000

\$95,000 or more

Prefer not to answer

What is your annual household income? 1 ⓘ

Less than \$110,000

\$110,000 or more

Prefer not to answer

0

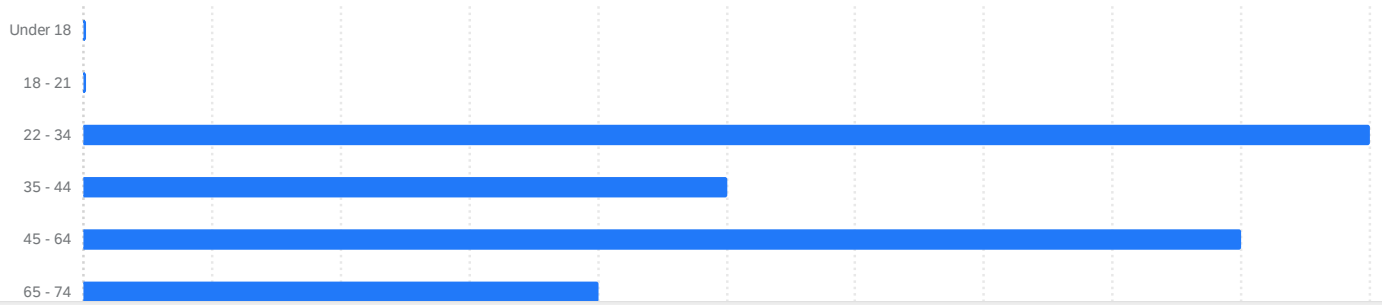
0.5

1

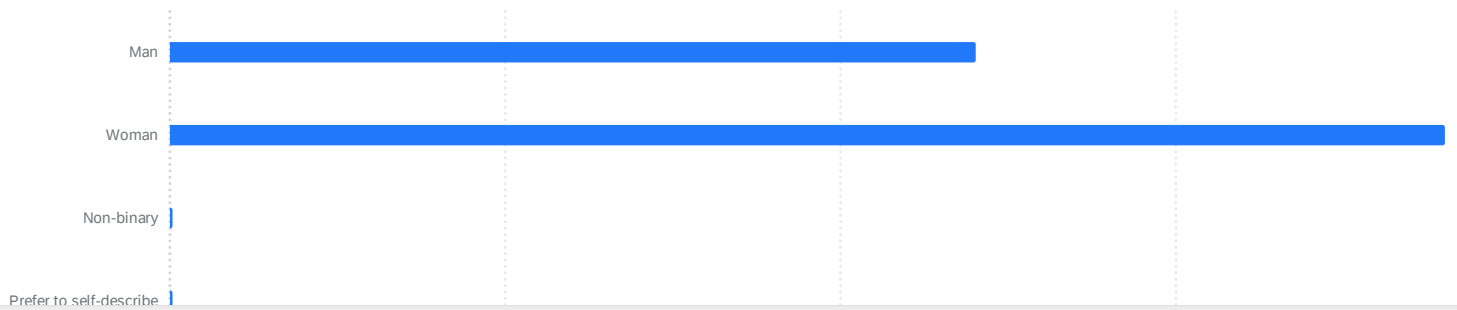
Do you have a disability? 31 ⓘ



What is your age? 30 ⓘ



How do you identify by gender? 31 ⓘ



Appendix B: Collision Diagram Lookup Tables

**Washington Street at Hanover Street and Beacon Hill Street
Crash Data Lookup
MassDOT Crash Data 2016-2021**

Index	Crash Date	Day	Time	Peak Hour	# Veh	# Injured	Crash Severity	Manner of Collision	Road Surface Conditions	Ambient Light Conditions	Weather Conditions	Vehicle Actions Prior Crash	Most Harmful Event	Driver Contributing Code
1	2016-01-07	Thu	1:58 PM	Off-peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Failed to yield right of way / No improper driving
2	2016-01-25	Mon	1:38 PM	Off-peak	2	0	Property damage only	Angle	Wet	Daylight	Clear	Turning left / Travelling straight ahead	Collision with motor vehicle in traffic	Other improper action
3	2016-02-03	Wed	7:43 AM	Peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Failed to yield right of way / No improper driving
4	2016-03-03	Thu	6:55 PM	Off-peak	2	0	Property damage only	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving / Inattention
5	2016-05-06	Fri	3:30 PM	Peak	2	0	Property damage only	Rear-end	Dry	Daylight	Clear	Backing / Slowing or stopped in traffic	Collision with motor vehicle in traffic	Unknown / No improper driving
6	2016-06-17	Fri	11:04 PM	Off-peak	3	0	Property damage only	Angle	Wet	Dark - lighted roadway	Cloudy / Rain	Travelling straight ahead / Entering traffic lane	Collision with motor vehicle in traffic	Failed to yield right of way / No improper driving
7	2016-07-06	Wed	4:22 PM	Peak	2	0	Property damage only	Rear-end	Dry	Daylight	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
8	2016-07-17	Sun	5:51 PM	Off-peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
9	2016-08-11	Thu	3:35 PM	Peak	2	4	Non-fatal injury	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
10	2016-08-29	Mon	5:34 PM	Peak	1	1	Non-fatal injury	Angle	Dry	Daylight	Clear	Slowing or stopped in traffic	Collision with cyclist (bicycle, tricycle, unicycle, pedal car)	No improper driving
11	2016-09-06	Tue	4:14 PM	Peak	2	3	Non-fatal injury	Angle	Wet	Daylight	Cloudy / Sleet, hail (freezing rain or drizzle)	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
12	2016-09-12	Mon	3:33 PM	Peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Turning left / Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
13	2016-11-18	Fri	10:40 PM	Off-peak	2	2	Non-fatal injury	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Physical impairment / No improper driving
14	2016-12-02	Fri	8:52 PM	Off-peak	2	1	Non-fatal injury	Angle	Dry	Dark - lighted roadway	Clear / Other	Travelling straight ahead / Other	Collision with motor vehicle in traffic	No improper driving / Unknown / Other improper action
15	2016-12-12	Mon	6:14 PM	Off-peak	2	2	Non-fatal injury	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
16	2016-12-30	Fri	10:05 PM	Off-peak	2	2	Non-fatal injury	Sideswipe, opposite direction	Dry	Dark - lighted roadway	Clear	Travelling straight ahead / Entering traffic lane	Collision with motor vehicle in traffic	Unknown
17	2017-01-01	Sun	8:23 AM	Off-peak	2	1	Non-fatal injury	Angle	Dry	Daylight	Clear	Unknown / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
18	2017-02-21	Tue	9:12 AM	Peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
19	2017-04-10	Mon	5:07 PM	Peak	1	0	Property damage only	Single vehicle crash	Dry	Daylight	Clear	Travelling straight ahead	Collision with light pole or other post/support	No improper driving
20	2017-10-13	Fri	4:30 PM	Peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Daylight	Clear	Turning left	Collision with pedestrian	Inattention
21	2018-01-07	Sun	9:54 AM	Off-peak	2	0	Property damage only	Rear-end	Ice	Daylight	Unknown	Parked / Unknown	Collision with parked motor vehicle / Unknown	Unknown
22	2018-02-01	Thu	7:52 PM	Off-peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with pedestrian	Unknown
23	2018-03-26	Mon	4:35 PM	Peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Slowing or stopped in traffic / Turning left	Collision with motor vehicle in traffic	No improper driving
24	2018-06-19	Tue	4:08 PM	Peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Daylight	Clear	Travelling straight ahead	Collision with pedestrian	Not reported
25	2018-10-28	Sun	3:53 AM	Off-peak	2	0	Property damage only	Angle	Wet	Dark - lighted roadway	Sleet, hail (freezing rain or drizzle)	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
26	2018-12-07	Fri	4:43 AM	Off-peak	2	1	Non-fatal injury	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
27	2019-01-15	Tue	9:49 PM	Off-peak	2	0	Property damage only	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving

**Washington Street at Hanover Street and Beacon Hill Street
Crash Data Lookup
MassDOT Crash Data 2016-2021**

28	2019-09-07 Sat	10:51 PM	Off-peak	2	0 Property damage only	Angle	Dry	Dark - lighted roadway	Cloudy	Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
29	2019-09-07 Sat	1:35 PM	Peak	2	1 Non-fatal injury	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
30	2019-11-07 Thu	5:20 PM	Peak	2	2 Non-fatal injury	Angle	Wet	Dark - lighted roadway	Rain	Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
31	2019-11-25 Mon	7:15 AM	Peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Turning left / Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
32	2019-12-17 Tue	3:02 PM	Peak	2	1 Non-fatal injury	Angle	Slush	Daylight	Snow / Sleet, hail (freezing rain or drizzle)	Travelling straight ahead / Entering traffic lane	Collision with motor vehicle in traffic	Not reported
33	2020-01-08 Wed	4:01 PM	Peak	2	0 Property damage only	Rear-end	Dry	Daylight	Cloudy	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
34	2020-03-04 Wed	4:53 PM	Peak	3	0 Property damage only	Angle	Dry	Daylight	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
35	2020-05-06 Wed	7:41 PM	Off-peak	2	0 Property damage only	Angle	Dry	Dusk	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
36	2020-06-03 Wed	9:38 PM	Off-peak	3	0 Property damage only	Angle	Wet	Dark - lighted roadway	Cloudy	Entering traffic lane / Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
37	2020-07-28 Tue	9:25 AM	Peak	2	1 Non-fatal injury	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Failed to yield right of way / Exceeded authorized speed limit
38	2020-08-08 Sat	4:31 PM	Off-peak	2	3 Non-fatal injury	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
39	2020-08-12 Wed	1:33 AM	Off-peak	3	0 Property damage only	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead / Parked	Collision with impact attenuator/crash cushion / Collision with motor vehicle in traffic	Unknown
40	2020-08-13 Thu	3:24 PM	Peak	2	0 Unknown	Sideswipe, same direction	Dry	Daylight	Clear	Travelling straight ahead / Parked	Collision with parked motor vehicle	Unknown
41	2021-02-23 Tue	5:04 PM	Peak	2	0 Property damage only	Angle	Dry	Dusk	Clear	Turning left / Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
42	2021-04-28 Wed	9:14 PM	Off-peak	2	0 Property damage only	Rear-end	Wet	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
43	2021-04-30 Fri	2:22 PM	Peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead / Entering traffic lane	Collision with motor vehicle in traffic	Unknown
44	2021-07-13 Tue	5:46 PM	Peak	2	0 Property damage only	Sideswipe, same direction	Dry	Daylight	Cloudy	Travelling straight ahead / Parked	Collision with parked motor vehicle	No improper driving
45	2021-08-29 Sun	10:50 PM	Off-peak	4	0 Property damage only	Rear-end	Dry	Dark - lighted roadway	Clear	Turning left / Parked	Collision with parked motor vehicle / Collision with motor vehicle in traffic	Not reported
46	2021-08-31 Tue	3:54 PM	Peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
47	2021-09-01 Wed	10:55 PM	Off-peak	1	0 Property damage only	Angle	Wet	Dusk	Rain	Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
48	2021-09-15 Wed	7:22 AM	Peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead / Entering traffic lane	Collision with motor vehicle in traffic	Not reported
49	2021-11-05 Fri	10:53 AM	Off-peak	2	2 Non-fatal injury	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
50	2021-11-20 Sat	1:16 PM	Peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown

**Freeman Square
Crash Data Lookup
MassDOT Crash Data 2016-2021**

Index	Crash Date	Day	Time	Peak Hour	# Veh	# Injured	Crash Severity	Manner of Collision	Road Surface Conditions	Ambient Light Conditions	Weather Conditions	Vehicle Actions Prior Crash	Most Harmful Event	Driver Contributing Code
1	2016-01-30	Sat	5:31 PM	Off-peak	2	0	Property damage only	Rear-end	Dry	Dark - lighted roadway	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
2	2016-02-03	Wed	7:40 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Wet	Dark - lighted roadway	Rain	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Inattention
3	2016-02-12	Fri	4:05 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Other / Parked	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Unknown / No improper driving
4	2016-03-20	Sun	1:29 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Entering traffic lane / Travelling straight ahead	Collision with parked motor vehicle	Not reported
5	2016-03-30	Wed	2:21 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Inattention / Failure to keep in proper lane or running off road / No improper driving
6	2016-04-17	Sun	2:26 AM	Off-peak	2	0	Property damage only	Rear-end	Dry	Dark - lighted roadway	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving / Other improper action
7	2016-05-12	Thu	3:58 PM	Peak	2	0	Property damage only	Head-on	Dry	Daylight	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	Failure to keep in proper lane or running off road / Wrong side or wrong way / No improper driving
8	2016-07-01	Fri	6:31 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Unknown / No improper driving
9	2016-07-28	Thu	11:58 AM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	No improper driving / Visibility obstructed
10	2016-09-18	Sun	8:49 PM	Off-peak	1	0	Unknown	Angle	Dry	Dark - lighted roadway	Cloudy	Travelling straight ahead	Collision with pedestrian	Other improper action
11	2016-09-20	Tue	12:09 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
12	2016-11-11	Fri	2:17 PM	Peak	1	1	Non-fatal injury	Unknown	Dry	Daylight	Clear	Travelling straight ahead	Collision with pedestrian	Unknown
13	2016-12-20	Tue	1:15 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Overtaking/passing / Parked	Collision with parked motor vehicle	Inattention / No improper driving
14	2016-12-28	Wed	1:15 PM	Off-peak	2	0	Property damage only	Angle	Dry	Daylight	Cloudy	Travelling straight ahead / Turning left	Collision with motor vehicle in traffic	No improper driving / Other improper action
15	2017-01-19	Thu	12:17 PM	Off-peak	2	0	Property damage only	Rear-end	Dry	Daylight	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / Followed too closely
16	2017-02-02	Thu	4:16 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Dusk	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Visibility obstructed / Unknown
17	2017-02-15	Wed	4:58 PM	Peak	1	0	Property damage only	Angle	Wet	Dark - lighted roadway	Sleet, hail (freezing rain or drizzle)	Turning left	Collision with pedestrian	Unknown
18	2017-02-15	Wed	5:09 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Wet	Dark - lighted roadway	Rain	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	No improper driving
19	2017-02-21	Tue	9:46 AM	Peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Daylight	Clear	Travelling straight ahead	Collision with pedestrian	Not reported
20	2017-03-23	Thu	5:08 PM	Peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Daylight	Clear	Turning right	Collision with pedestrian	Unknown
21	2017-03-24	Fri	9:34 PM	Off-peak	2	0	Property damage only	Rear-end	Dry	Dark - lighted roadway	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
22	2017-04-06	Thu	9:08 AM	Peak	2	0	Property damage only	Sideswipe, same direction	Wet	Daylight	Rain	Travelling straight ahead	Collision with motor vehicle in traffic	Unknown
23	2017-04-10	Mon	1:04 AM	Off-peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Dark - lighted roadway	Clear	Turning right	Collision with curb	Other improper action
24	2017-05-05	Fri	1:35 PM	Off-peak	2	0	Property damage only	Angle	Wet	Daylight	Rain	Entering traffic lane / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown

**Freeman Square
Crash Data Lookup
MassDOT Crash Data 2016-2021**

25	2017-05-17	Wed	4:01 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with parked motor vehicle	Unknown / No improper driving
26	2017-05-22	Mon	10:53 AM	Off-peak	2	0	Property damage only	Rear-end	Wet	Daylight	Rain	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
27	2017-05-23	Tue	12:18 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic	Inattention / No improper driving
28	2017-06-08	Thu	12:31 PM	Off-peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Travelling straight ahead / Unknown	Collision with motor vehicle in traffic	Unknown
29	2017-06-16	Fri	5:23 PM	Peak	2	0	Property damage only	Rear-end	Wet	Daylight	Rain	Backing / Parked	Collision with motor vehicle in traffic / Collision with parked motor vehicle	No improper driving
30	2017-07-25	Tue	9:28 PM	Off-peak	1	1	Non-fatal injury	Single vehicle crash	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with pedestrian	Other improper action
31	2017-08-04	Fri	3:20 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Other / Parked	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Unknown
32	2017-08-15	Tue	5:01 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Entering traffic lane / Travelling straight ahead	Collision with motor vehicle in traffic	Inattention / No improper driving
33	2017-08-24	Thu	1:30 PM	Off-peak	2	0	Property damage only	Angle	Dry	Daylight	Clear	Backing / Parked	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Inattention / No improper driving
34	2017-09-08	Fri	3:05 PM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	No improper driving
35	2017-09-26	Tue	11:10 AM	Off-peak	2	0	Property damage only	Sideswipe, opposite direction	Dry	Daylight	Clear	Travelling straight ahead / Turning left	Collision with motor vehicle in traffic	No improper driving / Failed to yield right of way / Other improper action
36	2017-12-08	Fri	5:54 PM	Peak	2	0	Property damage only	Rear-end	Dry	Dark - lighted roadway	Unknown	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
37	2017-12-14	Thu	2:41 PM	Peak	1	0	Property damage only	Single vehicle crash	Dry	Daylight	Clear	Travelling straight ahead	Collision with pedestrian	Glare
38	2018-01-09	Tue	11:53 AM	Off-peak	2	0	Property damage only	Rear-end	Dry	Daylight	Clear	Backing / Entering traffic lane	Collision with motor vehicle in traffic	No improper driving
39	2018-02-20	Tue	1:09 AM	Off-peak	2	0	Property damage only	Rear-end	Wet	Dark - lighted roadway	Cloudy	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	Unknown / No improper driving
40	2018-03-03	Sat	11:32 AM	Peak	2	0	Property damage only	Angle	Dry	Daylight	Cloudy / Severe crosswinds	Travelling straight ahead	Collision with motor vehicle in traffic	Disregarded traffic signs, signals, road markings / Unknown
41	2018-03-22	Thu	7:01 PM	Off-peak	2	1	Non-fatal injury	Single vehicle crash	Wet	Dark - lighted roadway	Cloudy	Parked / Travelling straight ahead	Overturn/rollover / Collision with motor vehicle in traffic	Operating vehicle in erratic, reckless, careless, negligent or aggressive manner / Physical impairment
42	2018-03-26	Mon	11:35 AM	Off-peak	1	1	Fatal injury	Single vehicle crash	Dry	Daylight	Clear	Turning left	Collision with pedestrian	Visibility obstructed / Inattention
43	2018-10-25	Thu	12:06 PM	Off-peak	1	0	Property damage only	Unknown	Dry	Daylight	Clear	Slowing or stopped in traffic	Collision with pedestrian	Unknown
44	2019-05-13	Mon	8:18 AM	Peak	2	0	Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Entering traffic lane / Travelling straight ahead	Collision with motor vehicle in traffic	Not reported
45	2019-07-05	Fri	12:40 AM	Off-peak	2	3	Non-fatal injury	Rear-end	Not reported	Dark - lighted roadway	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Not reported
46	2019-07-12	Fri	1:03 AM	Off-peak	2	1	Non-fatal injury	Rear-end	Not reported	Dark - lighted roadway	Rain	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	No improper driving
47	2019-10-11	Fri	11:14 PM	Off-peak	3	0	Property damage only	Rear-end	Wet	Dark - lighted roadway	Rain	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	No improper driving / Physical impairment / Operating vehicle in erratic, reckless, careless, negligent or aggressive manner
48	2020-02-10	Mon	12:40 PM	Off-peak	2	0	Property damage only	Single vehicle crash	Wet	Daylight	Cloudy / Rain	Turning right / Parked	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Inattention / No improper driving

**Freeman Square
Crash Data Lookup
MassDOT Crash Data 2016-2021**

49	2020-07-15	Wed	3:06 PM	Peak	2	0 Property damage only	Single vehicle crash	Dry	Daylight	Clear	Other / Parked	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Other improper action
50	2020-08-05	Wed	7:14 AM	Peak	1	1 Non-fatal injury	Single vehicle crash	Dry	Daylight	Clear	Travelling straight ahead	Collision with pedestrian	Other improper action
51	2020-08-11	Tue	6:00 PM	Peak	2	0 Property damage only	Rear-end	Dry	Daylight	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving / Followed too closely
52	2020-08-21	Fri	10:26 AM	Off-peak	3	0 Property damage only	Rear-end	Dry	Daylight	Clear	Slowing or stopped in traffic / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
53	2020-11-17	Tue	8:33 PM	Off-peak	2	0 Property damage only	Angle	Dry	Dark - lighted roadway	Clear	Travelling straight ahead / Turning left	Collision with motor vehicle in traffic	Unknown
54	2020-12-26	Sat	3:40 PM	Off-peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Unknown / Parked	Collision with parked motor vehicle / Other	Not Reported
55	2021-01-29	Fri	2:10 PM	Off-peak	2	0 Property damage only	Rear-end	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic	Not Reported
56	2021-02-05	Fri	5:46 PM	Peak	2	0 Property damage only	Unknown	Wet	Dark - lighted roadway	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic / Collision with parked motor vehicle	Not Reported
57	2021-02-16	Tue	4:08 PM	Peak	2	0 Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
58	2021-06-03	Thu	1:41 PM	Off-peak	2	0 Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with parked motor vehicle	No improper driving
59	2021-07-22	Thu	1:51 PM	Off-peak	1	1 Non-fatal injury	Sideswipe, same direction	Dry	Daylight	Clear	Turning left	Collision with pedestrian	Unknown
60	2021-08-21	Sat	8:21 PM	Off-peak	2	0 Property damage only	Sideswipe, opposite direction	Dry	Dark - lighted roadway	Clear	Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
61	2021-09-02	Thu	6:44 PM	Off-peak	1	0 Unknown	Sideswipe, same direction	Dry	Daylight	Clear	Parked	Collision with motor vehicle in traffic	Not Reported
62	2021-11-04	Thu	11:27 AM	Off-peak	2	0 Property damage only	Angle	Dry	Daylight	Clear	Entering traffic lane / Travelling straight ahead	Collision with motor vehicle in traffic	No improper driving
63	2021-11-11	Thu	1:02 PM	Off-peak	2	0 Property damage only	Sideswipe, same direction	Dry	Daylight	Clear	Parked / Travelling straight ahead	Collision with parked motor vehicle	Not Reported

Appendix C: Traffic and Speed Data

239292 (1) Washington @ Beacon Hill TMC - TMC

Thu Apr 13, 2023

Full Length (6 AM-10 AM, 2 PM-6 PM, 10 AM-2 PM)

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

All Movements

ID: 1055361, Location: 42.467894, -70.953695

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-13 6:00AM	0	0	0	0	0	3	4	79	11	0	94	0	0	5	5	0	10	4	11	33	11	0	55	0	159
6:15AM	0	0	0	0	0	1	0	67	18	0	85	1	5	12	6	0	23	4	4	32	12	0	48	0	156
6:30AM	1	0	0	0	1	3	4	78	10	0	92	0	1	8	3	0	12	0	12	47	13	0	72	3	177
6:45AM	0	0	0	0	0	0	4	70	11	0	85	1	3	12	2	0	17	2	21	50	8	0	79	1	181
Hourly Total	1	0	0	0	1	7	12	294	50	0	356	2	9	37	16	0	62	10	48	162	44	0	254	4	673
7:00AM	0	0	0	0	0	3	7	68	20	0	95	1	0	8	5	0	13	5	16	81	11	0	108	2	216
7:15AM	0	0	0	0	0	1	8	76	21	0	105	0	8	20	6	0	34	4	28	83	7	0	118	1	257
7:30AM	0	0	0	0	0	1	10	61	26	0	97	2	8	13	3	0	24	5	23	98	20	0	141	3	262
7:45AM	0	0	0	0	0	5	15	73	45	0	133	3	4	20	6	0	30	4	11	96	19	0	126	3	289
Hourly Total	0	0	0	0	0	10	40	278	112	0	430	6	20	61	20	0	101	18	78	358	57	0	493	9	1024
8:00AM	0	0	0	0	0	1	12	77	30	0	119	1	10	36	7	0	53	4	24	98	11	0	133	2	305
8:15AM	0	0	0	0	0	1	4	83	30	0	117	8	3	27	3	0	33	6	19	78	17	0	114	1	264
8:30AM	0	0	0	0	0	5	5	64	13	0	82	0	6	10	3	0	19	8	24	81	8	0	113	1	214
8:45AM	0	0	0	0	0	2	5	68	15	0	88	2	3	15	2	0	20	3	9	84	13	0	106	4	214
Hourly Total	0	0	0	0	0	9	26	292	88	0	406	11	22	88	15	0	125	21	76	341	49	0	466	8	997
9:00AM	0	0	0	0	0	1	12	72	8	0	92	5	5	7	2	0	14	3	7	90	11	0	108	3	214
9:15AM	0	0	0	0	0	3	5	66	14	0	85	0	6	12	3	0	21	3	16	65	12	0	93	0	199
9:30AM	0	0	0	0	0	9	4	72	6	0	82	3	5	7	4	0	16	15	10	76	5	0	91	4	189
9:45AM	0	0	0	0	0	4	4	64	7	0	75	2	5	15	3	0	23	0	8	79	13	0	100	0	198
Hourly Total	0	0	0	0	0	17	25	274	35	0	334	10	21	41	12	0	74	21	41	310	41	0	392	7	800
2:00PM	0	0	0	0	0	1	12	102	23	0	137	0	10	15	1	0	26	5	13	63	11	0	87	7	250
2:15PM	0	0	0	0	0	4	55	24	28	1	108	14	20	43	1	0	64	10	7	36	7	0	50	8	222
2:30PM	0	0	0	0	0	11	64	11	40	0	115	6	22	65	0	0	87	10	4	1	4	0	9	5	211
2:45PM	0	0	0	0	0	5	56	2	53	0	111	2	25	53	0	0	78	10	1	0	0	0	1	6	190
Hourly Total	0	0	0	0	0	21	187	139	144	1	471	22	77	176	2	0	255	35	25	100	22	0	147	26	873
3:00PM	0	0	0	0	0	6	28	79	32	0	139	1	17	47	2	0	66	9	15	78	18	0	111	10	316
3:15PM	0	0	0	0	0	7	14	82	19	0	115	9	8	36	8	0	52	4	28	75	14	0	117	5	284
3:30PM	0	0	0	0	0	10	13	88	14	0	115	0	5	30	6	0	41	6	8	69	14	0	91	6	247
3:45PM	0	0	0	0	0	8	11	105	27	0	143	5	6	23	8	0	37	3	9	77	14	0	100	2	280
Hourly Total	0	0	0	0	0	31	66	354	92	0	512	15	36	136	24	0	196	22	60	299	60	0	419	23	1127
4:00PM	0	0	0	0	0	6	18	106	16	0	140	1	14	58	7	0	79	6	25	60	17	0	102	4	321
4:15PM	0	0	0	0	0	5	15	95	23	0	133	1	15	33	7	0	55	7	15	77	18	0	110	0	298
4:30PM	0	0	0	0	0	7	29	97	25	0	151	6	9	46	5	0	60	6	13	88	19	0	120	0	331
4:45PM	0	0	0	0	0	7	20	88	16	0	124	0	10	43	3	0	56	9	10	84	23	0	117	0	297
Hourly Total	0	0	0	0	0	25	82	386	80	0	548	8	48	180	22	0	250	28	63	309	77	0	449	4	1247
5:00PM	0	0	0	0	0	3	22	87	18	0	127	3	6	46	7	0	59	10	16	73	21	0	110	2	296
5:15PM	0	0	0	0	0	9	13	102	18	0	133	1	4	27	3	0	34	8	14	89	26	0	129	3	296
5:30PM	0	0	0	0	0	5	16	104	15	0	135	2	9	25	7	0	41	6	11	79	18	0	108	2	284
5:45PM	0	0	0	0	0	6	15	82	14	0	111	0	5	18	2	0	25	5	17	71	23	0	111	2	247
Hourly Total	0	0	0	0	0	23	66	375	65	0	506	6	24	116	19	0	159	29	58	312	88	0	458	9	1123
2023-04-15 10:00AM	0	0	0	0	0	6	8	63	14	1	86	1	2	13	5	0	20	1	8	70	5	0	83	0	189
10:15AM	0	0	0	0	0	4	8	72	12	0	92	0	4	11	2	0	17	7	7	40	7	0	54	1	163
10:30AM	1	0	0	0	1	5	7	84	9	0	100	1	9	9	3	0	21	5	6	61	7	0	74	0	196
10:45AM	0	0	0	0	0	4	3	76	7	0	86	0	7	9	2	0	18	1	7	87	5	0	99	3	203
Hourly Total	1	0	0	0	1	19	26	295	42	1	364	2	22	42	12	0	76	14	28	258	24	0	310	4	751
11:00AM	0	0	0	0	0	3	11	92	24	0	127	3	7	11	4	0	22	4	8	61	8	0	77	1	226
11:15AM	0	0	0	0	0	3	5	106	59	0	170	0	10	15	11	0	36	5	6	55	11	0	72	2	278
11:30AM	0	0	0	0	0	4	12	95	34	0	141	1	19	16	2	0	37	5	8	71	14	0	93	0	271
11:45AM	0	0	0	0	0	8	10	71	10	0	91	0	8	17	6	0	31	7	8	100	9	0	117	1	239
Hourly Total	0	0	0	0	0	18	38	364	127	0	529	4	44	59	23	0	126	21	30	287	42	0	359	4	1014
12:00PM	0	0	0	0	0	6	10	78	14	0	102	2	10	17	4	0	31	5	8	67	11	0	86	0	219
12:15PM	0	0	0	0	0	4	11	75	16	0	102	1	2	18	5	0	25	12	7	61	11	0	79	1	206
12:30PM	0	0	0	0	0	3	9	79	10	0	98	1	3	17	4	0	24	4	10	74	14	0	98	0	220
12:45PM	0	0	0	0	0	11	10	57	9	0	76	0	3	22	2	0	27	3	19	79	12	0	110	0	213
Hourly Total	0	0	0	0	0	24	40	289	49	0	378	4	18	74	15	0	107	24	44	281	48	0	373	1	858
1:00PM	0	0	0	0	0	4	9	84	13	0	106	0	5	13	4	0	22	2	13	80	8	0	101	2	229
1:15PM	0	0	0	0	0	3	7	74	13	0	94	0	8	21	8	0	37	10	12	73	10	0	95	1	226

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
1:30PM	0	0	0	0	0	6	10	81	10	0	101	4	11	17	7	0	35	10	12	83	6	0	101	0	237
1:45PM	0	0	0	0	0	6	10	75	13	0	98	0	5	12	2	0	19	4	13	74	18	0	105	3	222
Hourly Total	0	0	0	0	0	19	36	314	49	0	399	4	29	63	21	0	113	26	50	310	42	0	402	6	914
Total	2	0	0	0	2	223	644	3654	933	2	5233	94	370	1073	201	0	1644	269	601	3327	594	0	4522	105	11401
% Approach	100%	0%	0%	0%	0%	-	12.3%	69.8%	17.8%	0%	-	22.5%	65.3%	12.2%	0%	-	13.3%	73.6%	13.1%	0%	-	-	-	-	
% Total	0%	0%	0%	0%	0%	-	5.6%	32.0%	8.2%	0%	45.9%	-	3.2%	9.4%	1.8%	0%	14.4%	-	5.3%	29.2%	5.2%	0%	39.7%	-	-
Motorcycles	0	0	0	0	0	-	4	26	8	0	38	-	1	2	0	0	3	-	8	19	2	0	29	-	70
% Motorcycles	0%	0%	0%	0%	0%	-	0.6%	0.7%	0.9%	0%	0.7%	-	0.3%	0.2%	0%	0%	0.2%	-	1.3%	0.6%	0.3%	0%	0.6%	-	0.6%
Lights	2	0	0	0	0	2	615	3499	895	2	5011	-	360	1049	199	0	1608	-	577	3198	562	0	4337	-	10958
% Lights	100%	0%	0%	0%	100%	-	95.5%	95.8%	95.9%	100%	95.8%	-	97.3%	97.8%	99.0%	0%	97.8%	-	96.0%	96.1%	94.6%	0%	95.9%	-	96.1%
Single-Unit Trucks	0	0	0	0	0	-	10	70	15	0	95	-	4	9	2	0	15	-	8	58	14	0	80	-	190
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	1.6%	1.9%	1.6%	0%	1.8%	-	1.1%	0.8%	1.0%	0%	0.9%	-	1.3%	1.7%	2.4%	0%	1.8%	-	1.7%
Articulated Trucks	0	0	0	0	0	-	1	3	0	0	4	-	0	0	0	0	0	-	2	10	1	0	13	-	17
% Articulated Trucks	0%	0%	0%	0%	0%	-	0.2%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	0%	-	0.3%	0.3%	0.2%	0%	0.3%	-	0.1%
Buses	0	0	0	0	0	-	10	46	15	0	71	-	2	12	0	0	14	-	6	32	15	0	53	-	138
% Buses	0%	0%	0%	0%	0%	-	1.6%	1.3%	1.6%	0%	1.4%	-	0.5%	1.1%	0%	0%	0.9%	-	1.0%	1.0%	2.5%	0%	1.2%	-	1.2%
Bicycles on Road	0	0	0	0	0	-	4	10	0	0	14	-	3	1	0	0	4	-	0	10	0	0	10	-	28
% Bicycles on Road	0%	0%	0%	0%	0%	-	0.6%	0.3%	0%	0%	0.3%	-	0.8%	0.1%	0%	0%	0.2%	-	0%	0.3%	0%	0%	0.2%	-	0.2%
Pedestrians	-	-	-	-	-	205	-	-	-	-	-	92	-	-	-	-	-	256	-	-	-	-	-	103	
% Pedestrians	-	-	-	-	-	91.9%	-	-	-	-	-	97.9%	-	-	-	-	-	95.2%	-	-	-	-	-	98.1%	
Bicycles on Crosswalk	-	-	-	-	-	18	-	-	-	-	-	2	-	-	-	-	-	13	-	-	-	-	-	2	
% Bicycles on Crosswalk	-	-	-	-	-	8.1%	-	-	-	-	-	2.1%	-	-	-	-	-	4.8%	-	-	-	-	-	1.9%	

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

239292 (1) Washington @ Beacon Hill TMC - TMC

Thu Apr 13, 2023

AM Peak (Apr 13 2023 7:30AM - 8:30 AM)

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

All Movements

ID: 1055361, Location: 42.467894, -70.953695

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-04-13 7:30AM	0	0	0	0	0	1	10	61	26	0	97	2	8	13	3	0	24	5	23	98	20	0	141	3	262
7:45AM	0	0	0	0	0	5	15	73	45	0	133	3	4	20	6	0	30	4	11	96	19	0	126	3	289
8:00AM	0	0	0	0	0	1	12	77	30	0	119	1	10	36	7	0	53	4	24	98	11	0	133	2	305
8:15AM	0	0	0	0	0	1	4	83	30	0	117	8	3	27	3	0	33	6	19	78	17	0	114	1	264
Total	0	0	0	0	0	8	41	294	131	0	466	14	25	96	19	0	140	19	77	370	67	0	514	9	1120
% Approach	0%	0%	0%	0%	-	-	8.8%	63.1%	28.1%	0%	-	-	17.9%	68.6%	13.6%	0%	-	-	15.0%	72.0%	13.0%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	3.7%	26.3%	11.7%	0%	41.6%	-	2.2%	8.6%	1.7%	0%	12.5%	-	6.9%	33.0%	6.0%	0%	45.9%	-	-
PHF	-	-	-	-	-	-	0.683	0.893	0.728	-	0.874	-	0.625	0.667	0.679	-	0.660	-	0.802	0.944	0.838	-	0.911	-	0.917
Motorcycles	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	1	1	0	0	2	-	4
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	1.3%	0.3%	0%	0%	0.4%	-	0.4%
Lights	0	0	0	0	0	-	38	279	123	0	440	-	24	95	18	0	137	-	73	359	60	0	492	-	1069
% Lights	0%	0%	0%	0%	0%	-	92.7%	94.9%	93.9%	0%	94.4%	-	96.0%	99.0%	94.7%	0%	97.9%	-	94.8%	97.0%	89.6%	0%	95.7%	-	95.4%
Single-Unit Trucks	0	0	0	0	0	-	0	7	3	0	10	-	1	1	1	0	3	-	1	6	2	0	9	-	22
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	2.4%	2.3%	0%	2.1%	-	4.0%	1.0%	5.3%	0%	2.1%	-	1.3%	1.6%	3.0%	0%	1.8%	-	2.0%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	2	3	0	0	5	-	5
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	2.6%	0.8%	0%	0%	1.0%	-	0.4%
Buses	0	0	0	0	0	-	3	5	5	0	13	-	0	0	0	0	0	-	0	1	5	0	6	-	19
% Buses	0%	0%	0%	0%	0%	-	7.3%	1.7%	3.8%	0%	2.8%	-	0%	0%	0%	0%	0%	-	0%	0.3%	7.5%	0%	1.2%	-	1.7%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.1%
Pedestrians	-	-	-	-	-	8	-	-	-	-	-	14	-	-	-	-	-	19	-	-	-	-	-	9	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

239292 (1) Washington @ Beacon Hill TMC - TMC

Thu Apr 13, 2023

PM Peak (Apr 13 2023 4PM - 5 PM) - Overall Peak Hour

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

All Movements

ID: 1055361, Location: 42.467894, -70.953695

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-04-13 4:00PM	0	0	0	0	0	6	18	106	16	0	140	1	14	58	7	0	79	6	25	60	17	0	102	4	321
4:15PM	0	0	0	0	0	5	15	95	23	0	133	1	15	33	7	0	55	7	15	77	18	0	110	0	298
4:30PM	0	0	0	0	0	7	29	97	25	0	151	6	9	46	5	0	60	6	13	88	19	0	120	0	331
4:45PM	0	0	0	0	0	7	20	88	16	0	124	0	10	43	3	0	56	9	10	84	23	0	117	0	297
Total	0	0	0	0	0	25	82	386	80	0	548	8	48	180	22	0	250	28	63	309	77	0	449	4	1247
% Approach	0%	0%	0%	0%	-	-	15.0%	70.4%	14.6%	0%	-	-	19.2%	72.0%	8.8%	0%	-	-	14.0%	68.8%	17.1%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	6.6%	31.0%	6.4%	0%	43.9%	-	3.8%	14.4%	1.8%	0%	20.0%	-	5.1%	24.8%	6.2%	0%	36.0%	-	-
PHF	-	-	-	-	-	-	0.707	0.910	0.800	-	0.907	-	0.800	0.776	0.786	-	0.791	-	0.630	0.878	0.837	-	0.935	-	0.942
Motorcycles	0	0	0	0	0	-	0	0	2	0	2	-	0	0	0	0	0	-	1	2	0	0	3	-	5
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0%	2.5%	0%	0.4%	-	0%	0%	0%	0%	0%	-	1.6%	0.6%	0%	0%	0.7%	-	0.4%
Lights	0	0	0	0	0	-	81	374	74	0	529	-	48	178	22	0	248	-	60	293	73	0	426	-	1203
% Lights	0%	0%	0%	0%	0%	-	98.8%	96.9%	92.5%	0%	96.5%	-	100%	98.9%	100%	0%	99.2%	-	95.2%	94.8%	94.8%	0%	94.9%	-	96.5%
Single-Unit Trucks	0	0	0	0	0	-	1	5	1	0	7	-	0	1	0	0	1	-	0	8	3	0	11	-	19
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	1.2%	1.3%	1.3%	0%	1.3%	-	0%	0.6%	0%	0%	0.4%	-	0%	2.6%	3.9%	0%	2.4%	-	1.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	1	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	0.1%
Buses	0	0	0	0	0	-	0	7	3	0	10	-	0	1	0	0	1	-	2	5	1	0	8	-	19
% Buses	0%	0%	0%	0%	0%	-	0%	1.8%	3.8%	0%	1.8%	-	0%	0.6%	0%	0%	0.4%	-	3.2%	1.6%	1.3%	0%	1.8%	-	1.5%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	25	-	-	-	-	-	8	-	-	-	-	-	27	-	-	-	-	-	4	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	96.4%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	3.6%	-	-	-	-	-	0%	-

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

239292 (1) Washington @ Beacon Hill TMC - TMC

Sat Apr 15, 2023

AM Peak (WKND) (Apr 15 2023 10AM - 11 AM)

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

All Movements

ID: 1055361, Location: 42.467894, -70.953695

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-15 10:00AM	0	0	0	0	0	6	8	63	14	1	86	1	2	13	5	0	20	1	8	70	5	0	83	0	189
10:15AM	0	0	0	0	0	4	8	72	12	0	92	0	4	11	2	0	17	7	7	40	7	0	54	1	163
10:30AM	1	0	0	0	1	5	7	84	9	0	100	1	9	9	3	0	21	5	6	61	7	0	74	0	196
10:45AM	0	0	0	0	0	4	3	76	7	0	86	0	7	9	2	0	18	1	7	87	5	0	99	3	203
Total	1	0	0	0	1	19	26	295	42	1	364	2	22	42	12	0	76	14	28	258	24	0	310	4	751
% Approach	100%	0%	0%	0%	-	-	7.1%	81.0%	11.5%	0.3%	-	-	28.9%	55.3%	15.8%	0%	-	-	9.0%	83.2%	7.7%	0%	-	-	-
% Total	0.1%	0%	0%	0%	0.1%	-	3.5%	39.3%	5.6%	0.1%	48.5%	-	2.9%	5.6%	1.6%	0%	10.1%	-	3.7%	34.4%	3.2%	0%	41.3%	-	-
PHF	0.250	-	-	-	0.250	-	0.813	0.883	0.750	0.250	0.914	-	0.611	0.808	0.600	-	0.905	-	0.875	0.753	0.857	-	0.794	-	0.929
Motorcycles	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Lights	1	0	0	0	1	-	26	289	41	1	357	-	22	42	12	0	76	-	26	253	24	0	303	-	737
% Lights	100%	0%	0%	0%	100%	-	100%	98.0%	97.6%	100%	98.1%	-	100%	100%	100%	0%	100%	-	92.9%	98.1%	100%	0%	97.7%	-	98.1%
Single-Unit Trucks	0	0	0	0	0	-	0	3	1	0	4	-	0	0	0	0	0	-	2	1	0	0	3	-	7
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.0%	2.4%	0%	1.1%	-	0%	0%	0%	0%	0%	-	7.1%	0.4%	0%	0%	1.0%	-	0.9%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Buses	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.6%	-	0.4%
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	0	2	0	0	2	-	4
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.6%	-	0.5%
Pedestrians	-	-	-	-	-	16	-	-	-	-	-	2	-	-	-	-	-	11	-	-	-	-	-	4	
% Pedestrians	-	-	-	-	-	84.2%	-	-	-	-	-	100%	-	-	-	-	-	78.6%	-	-	-	-	-	100%	
Bicycles on Crosswalk	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	15.8%	-	-	-	-	-	0%	-	-	-	-	-	21.4%	-	-	-	-	-	0%	

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

239292 (1) Washington @ Beacon Hill TMC - TMC

Sat Apr 15, 2023

Midday Peak (WKND) (Apr 15 2023 11AM - 12 PM)

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

All Movements

ID: 1055361, Location: 42.467894, -70.953695

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						Int
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-15 11:00AM	0	0	0	0	0	3	11	92	24	0	127	3	7	11	4	0	22	4	8	61	8	0	77	1	226
11:15AM	0	0	0	0	0	3	5	106	59	0	170	0	10	15	11	0	36	5	6	55	11	0	72	2	278
11:30AM	0	0	0	0	0	4	12	95	34	0	141	1	19	16	2	0	37	5	8	71	14	0	93	0	271
11:45AM	0	0	0	0	0	8	10	71	10	0	91	0	8	17	6	0	31	7	8	100	9	0	117	1	239
Total	0	0	0	0	0	18	38	364	127	0	529	4	44	59	23	0	126	21	30	287	42	0	359	4	1014
% Approach	0%	0%	0%	0%	-	-	7.2%	68.8%	24.0%	0%	-	-	34.9%	46.8%	18.3%	0%	-	-	8.4%	79.9%	11.7%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	3.7%	35.9%	12.5%	0%	52.2%	-	4.3%	5.8%	2.3%	0%	12.4%	-	3.0%	28.3%	4.1%	0%	35.4%	-	-
PHF	-	-	-	-	-	-	0.792	0.860	0.538	-	0.778	-	0.579	0.868	0.523	-	0.851	-	0.938	0.722	0.750	-	0.772	-	0.912
Motorcycles	0	0	0	0	0	-	1	1	0	0	2	-	0	0	0	0	0	-	1	1	1	0	3	-	5
% Motorcycles	0%	0%	0%	0%	0%	-	2.6%	0.3%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	3.3%	0.3%	2.4%	0%	0.8%	-	0.5%
Lights	0	0	0	0	0	-	35	353	126	0	514	-	42	59	23	0	124	-	29	281	40	0	350	-	988
% Lights	0%	0%	0%	0%	0%	-	92.1%	97.0%	99.2%	0%	97.2%	-	95.5%	100%	100%	0%	98.4%	-	96.7%	97.9%	95.2%	0%	97.5%	-	97.4%
Single-Unit Trucks	0	0	0	0	0	-	2	6	1	0	9	-	1	0	0	0	1	-	0	4	1	0	5	-	15
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	5.3%	1.6%	0.8%	0%	1.7%	-	2.3%	0%	0%	0%	0.8%	-	0%	1.4%	2.4%	0%	1.4%	-	1.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	1	0	0	0	1	-	0	0	0	0	0	-	2
% Buses	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.2%	-	2.3%	0%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0.2%
Bicycles on Road	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	0	1	0	0	1	-	4
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0.4%
Pedestrians	-	-	-	-	-	18	-	-	-	-	-	4	-	-	-	-	-	20	-	-	-	-	-	3	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	95.2%	-	-	-	-	-	75.0%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	4.8%	-	-	-	-	-	25.0%	-

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

239292 (1) Washington @ Beacon Hill TMC - TMC

Sat Apr 15, 2023

PM Peak (WKND) (Apr 15 2023 1PM - 2 PM)

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

All Movements

ID: 1055361, Location: 42.467894, -70.953695

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Beacon Hill Avenue Southbound						Washington Street (Route 129) Westbound						Hanover Street Northbound						Washington Street (Route 129) Eastbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2023-04-15 1:00PM	0	0	0	0	0	4	9	84	13	0	106	0	5	13	4	0	22	2	13	80	8	0	101	2	229
1:15PM	0	0	0	0	0	3	7	74	13	0	94	0	8	21	8	0	37	10	12	73	10	0	95	1	226
1:30PM	0	0	0	0	0	6	10	81	10	0	101	4	11	17	7	0	35	10	12	83	6	0	101	0	237
1:45PM	0	0	0	0	0	6	10	75	13	0	98	0	5	12	2	0	19	4	13	74	18	0	105	3	222
Total	0	0	0	0	0	19	36	314	49	0	399	4	29	63	21	0	113	26	50	310	42	0	402	6	914
% Approach	0%	0%	0%	0%	0%	-	9.0%	78.7%	12.3%	0%	-	-	25.7%	55.8%	18.6%	0%	-	-	12.4%	77.1%	10.4%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	3.9%	34.4%	5.4%	0%	43.7%	-	3.2%	6.9%	2.3%	0%	12.4%	-	5.5%	33.9%	4.6%	0%	44.0%	-	-
PHF	-	-	-	-	-	-	0.900	0.935	0.942	-	0.941	-	0.614	0.750	0.656	-	0.750	-	0.962	0.931	0.583	-	0.964	-	0.961
Motorcycles	0	0	0	0	0	-	0	3	1	0	4	-	0	0	0	0	0	-	2	4	0	0	6	-	10
% Motorcycles	0%	0%	0%	0%	0%	-	0%	1.0%	2.0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	4.0%	1.3%	0%	0%	1.5%	-	1.1%
Lights	0	0	0	0	0	-	35	305	48	0	388	-	27	63	21	0	111	-	48	301	42	0	391	-	890
% Lights	0%	0%	0%	0%	0%	-	97.2%	97.1%	98.0%	0%	97.2%	-	93.1%	100%	100%	0%	98.2%	-	96.0%	97.1%	100%	0%	97.3%	-	97.4%
Single-Unit Trucks	0	0	0	0	0	-	1	5	0	0	6	-	0	0	0	0	0	-	0	2	0	0	2	-	8
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	2.8%	1.6%	0%	0%	1.5%	-	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.5%	-	0.9%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Buses	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.5%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	2	0	0	0	2	-	0	1	0	0	1	-	3
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	6.9%	0%	0%	0%	1.8%	-	0%	0.3%	0%	0%	0.2%	-	0.3%
Pedestrians	-	-	-	-	-	18	-	-	-	-	-	4	-	-	-	-	-	26	-	-	-	-	-	6	-
% Pedestrians	-	-	-	-	-	94.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	5.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

239292 (3) Freeman Square TMC - TMC

Thu Apr 13, 2023

Full Length (6 AM-10 AM, 2 PM-6 PM, 10 AM-2 PM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Union Street Southbound								Silsbee Street Westbound								Union Street Northbound							
Time	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*			
2023-04-13 6:00AM	2	3	29	15	0	49	1	0	0	0	0	0	0	1	1	16	2	0	0	19	0			
6:15AM	1	5	35	14	0	55	4	0	0	0	0	0	0	2	1	15	0	0	0	16	1			
6:30AM	5	14	40	14	0	73	2	0	0	0	0	0	0	2	4	14	3	0	0	21	1			
6:45AM	1	8	44	18	0	71	6	0	0	0	0	0	0	2	1	24	6	2	0	33	1			
Hourly Total	9	30	148	61	0	248	13	0	0	0	0	0	0	7	7	69	11	2	0	89	3			
7:00AM	4	7	45	15	0	71	2	0	0	0	0	0	0	5	3	27	9	1	0	40	2			
7:15AM	4	11	55	23	0	93	3	0	0	0	0	0	0	4	6	25	8	0	0	39	1			
7:30AM	3	14	69	25	0	111	31	0	0	0	0	0	0	2	13	62	8	3	0	86	4			
7:45AM	3	17	62	21	0	103	24	0	0	0	0	0	0	5	14	54	15	3	0	86	6			
Hourly Total	14	49	231	84	0	378	60	0	0	0	0	0	0	16	36	168	40	7	0	251	13			
8:00AM	6	22	76	22	0	126	6	0	0	0	0	0	0	4	21	45	4	0	0	70	4			
8:15AM	5	22	51	19	0	97	3	0	0	0	0	0	0	3	11	38	6	4	0	59	8			
8:30AM	0	15	45	19	0	79	5	0	0	0	0	0	0	6	8	47	3	3	0	61	4			
8:45AM	0	6	38	22	0	66	3	0	0	0	0	0	0	5	13	47	5	2	0	67	4			
Hourly Total	11	65	210	82	0	368	17	0	0	0	0	0	0	18	53	177	18	9	0	257	20			
9:00AM	3	4	41	19	0	67	4	0	0	0	0	0	0	5	15	49	2	1	0	67	4			
9:15AM	3	4	42	17	0	66	4	0	0	0	0	0	0	11	11	33	5	2	0	51	8			
9:30AM	0	10	42	15	0	67	2	0	0	0	0	0	0	9	8	54	7	0	0	69	4			
9:45AM	1	13	52	19	0	85	2	0	0	0	0	0	0	10	14	39	4	0	1	58	5			
Hourly Total	7	31	177	70	0	285	12	0	0	0	0	0	0	35	48	175	18	3	1	245	21			
2:00PM	8	15	58	5	0	86	13	0	0	0	0	0	0	12	12	68	11	1	0	92	12			
2:15PM	3	13	46	16	0	78	9	0	0	0	0	0	0	16	11	78	7	2	0	98	7			
2:30PM	10	14	53	12	0	89	3	0	0	0	0	0	0	20	12	78	7	1	0	98	17			
2:45PM	3	19	45	23	0	90	19	0	0	0	0	0	0	21	26	53	13	2	1	95	22			
Hourly Total	24	61	202	56	0	343	44	0	0	0	0	0	0	69	61	277	38	6	1	383	58			
3:00PM	7	8	65	15	0	95	6	0	0	0	0	0	0	9	10	73	15	8	0	106	3			
3:15PM	16	16	46	20	0	98	10	0	0	0	0	0	0	10	13	80	10	2	0	105	4			
3:30PM	4	12	60	15	0	91	2	0	0	0	0	0	0	7	17	77	15	5	1	115	8			
3:45PM	10	9	50	21	0	90	8	0	0	0	0	0	0	14	16	82	7	1	0	106	3			
Hourly Total	37	45	221	71	0	374	26	0	0	0	0	0	0	40	56	312	47	16	1	432	18			
4:00PM	9	21	58	16	0	104	5	0	0	0	0	0	0	6	10	95	12	5	0	122	6			
4:15PM	6	18	51	20	0	95	4	0	0	0	0	0	0	8	13	86	9	2	0	110	6			
4:30PM	8	24	46	21	0	99	3	0	0	0	0	0	0	11	15	94	10	1	2	122	9			
4:45PM	1	9	49	19	0	78	5	0	0	0	0	0	0	9	7	83	11	2	0	103	3			
Hourly Total	24	72	204	76	0	376	17	0	0	0	0	0	0	34	45	358	42	10	2	457	24			
5:00PM	9	19	65	14	0	107	14	0	0	0	0	0	0	16	7	95	3	4	0	109	11			
5:15PM	9	16	48	19	0	92	5	0	0	0	0	0	0	11	14	90	4	2	0	110	18			
5:30PM	6	19	62	14	0	101	6	0	0	0	0	0	0	4	11	87	2	1	0	101	10			
5:45PM	11	18	46	15	0	90	9	0	0	0	0	0	0	12	9	81	6	0	0	96	6			
Hourly Total	35	72	221	62	0	390	34	0	0	0	0	0	0	43	41	353	15	7	0	416	45			
2023-04-15 10:00AM	7	10	36	8	0	61	4	0	0	0	0	0	0	13	10	53	7	2	1	73	3			
10:15AM	3	10	47	15	1	76	6	0	0	0	0	0	0	8	7	47	5	1	1	61	3			
10:30AM	1	14	61	22	0	98	0	0	0	0	0	0	0	5	13	44	5	1	0	63	4			
10:45AM	4	15	47	19	0	85	3	0	0	0	0	0	0	7	16	48	6	4	1	75	3			
Hourly Total	15	49	191	64	1	320	13	0	0	0	0	0	0	33	46	192	23	8	3	272	13			
11:00AM	11	16	49	12	0	88	8	0	0	0	0	0	0	15	17	62	6	0	1	86	4			
11:15AM	8	17	38	15	0	78	3	0	0	0	0	0	0	11	10	61	3	5	0	79	8			
11:30AM	3	15	39	12	0	69	4	0	0	0	0	0	0	8	8	45	3	4	0	60	3			
11:45AM	9	16	35	18	0	78	4	0	0	0	0	0	0	11	12	57	6	2	0	77	1			
Hourly Total	31	64	161	57	0	313	19	0	0	0	0	0	0	45	47	225	18	11	1	302	16			
12:00PM	4	20	56	12	0	92	6	1	0	0	1	0	2	7	14	91	13	4	0	122	2			
12:15PM	9	19	45	23	0	96	3	0	0	0	0	0	0	9	12	80	6	1	1	100	6			

Leg Direction	Union Street Southbound								Silsbee Street Westbound								Union Street Northbound							
Time	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*			
12:30PM	8	17	39	11	0	75	6	0	0	0	0	0	0	13	14	80	9	3	0	106	4			
12:45PM	9	14	52	22	0	97	9	0	0	0	0	0	0	10	14	61	5	2	0	82	4			
Hourly Total	30	70	192	68	0	360	24	1	0	0	1	0	2	39	54	312	33	10	1	410	16			
1:00PM	9	13	48	16	0	86	10	0	0	0	0	0	0	16	9	63	6	1	1	80	5			
1:15PM	5	17	50	13	0	85	1	0	0	0	0	0	0	25	11	60	8	1	0	80	4			
1:30PM	7	26	55	16	1	105	9	0	0	0	0	0	0	19	9	52	5	6	1	73	2			
1:45PM	6	11	33	14	1	65	11	0	0	0	0	0	0	16	9	63	8	6	1	87	4			
Hourly Total	27	67	186	59	2	341	31	0	0	0	0	0	0	76	38	238	27	14	3	320	15			
Total	264	675	2344	810	3	4096	310	1	0	0	1	0	2	455	532	2856	330	103	13	3834	262			
% Approach	6.4%	16.5%	57.2%	19.8%	0.1%	-	-	50.0%	0%	0%	50.0%	0%	-	-	13.9%	74.5%	8.6%	2.7%	0.3%	-	-			
% Total	2.5%	6.5%	22.5%	7.8%	0%	39.3%	-	0%	0%	0%	0%	0%	0%	-	5.1%	27.4%	3.2%	1.0%	0.1%	36.8%	-			
Motorcycles	1	4	16	6	0	27	-	0	0	0	0	0	0	-	2	26	0	0	0	28	-			
% Motorcycles	0.4%	0.6%	0.7%	0.7%	0%	0.7%	-	0%	0%	0%	0%	0%	0%	-	0.4%	0.9%	0%	0%	0%	0.7%	-			
Lights	256	635	2275	780	3	3949	-	0	0	0	0	0	0	-	528	2745	327	101	13	3714	-			
% Lights	97.0%	94.1%	97.1%	96.3%	100%	96.4%	-	0%	0%	0%	0%	0%	0%	-	99.2%	96.1%	99.1%	98.1%	100%	96.9%	-			
Single-Unit Trucks	5	5	24	11	0	45	-	0	0	0	0	0	0	-	0	23	3	1	0	27	-			
% Single-Unit Trucks	1.9%	0.7%	1.0%	1.4%	0%	1.1%	-	0%	0%	0%	0%	0%	0%	-	0%	0.8%	0.9%	1.0%	0%	0.7%	-			
Articulated Trucks	0	2	2	1	0	5	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-			
% Articulated Trucks	0%	0.3%	0.1%	0.1%	0%	0.1%	-	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-			
Buses	1	28	22	12	0	63	-	0	0	0	0	0	0	-	2	57	0	1	0	60	-			
% Buses	0.4%	4.1%	0.9%	1.5%	0%	1.5%	-	0%	0%	0%	0%	0%	0%	-	0.4%	2.0%	0%	1.0%	0%	1.6%	-			
Bicycles on Road	1	1	5	0	0	7	-	1	0	0	1	0	2	-	0	4	0	0	0	4	-			
% Bicycles on Road	0.4%	0.1%	0.2%	0%	0%	0.2%	-	100%	0%	0%	100%	0%	100%	-	0%	0.1%	0%	0%	0%	0.1%	-			
Pedestrians	-	-	-	-	-	-	304	-	-	-	-	-	-	441	-	-	-	-	-	-	250			
% Pedestrians	-	-	-	-	-	-	98.1%	-	-	-	-	-	-	96.9%	-	-	-	-	-	-	95.4%			
Bicycles on Crosswalk	-	-	-	-	-	-	6	-	-	-	-	-	-	14	-	-	-	-	-	-	12			
% Bicycles on Crosswalk	-	-	-	-	-	-	1.9%	-	-	-	-	-	-	3.1%	-	-	-	-	-	-	4.6%			

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Thu Apr 13, 2023

Full Length (6 AM-10 AM, 2 PM-6 PM, 10 AM-2 PM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Buffum Street Eastbound								Baldwin Street Southeastbound								Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*			
2023-04-13 6:00AM	1	5	10	0	0	16	3	0	0	0	0	0	0	4	84		
6:15AM	1	7	14	2	0	24	2	0	0	0	0	0	0	4	95		
6:30AM	0	8	8	1	0	17	3	0	0	0	1	0	1	8	112		
6:45AM	0	15	17	0	1	33	4	0	0	0	0	0	0	8	137		
Hourly Total	2	35	49	3	1	90	12	0	0	0	1	0	1	24	428		
7:00AM	1	8	14	1	0	24	5	0	0	0	0	0	0	6	135		
7:15AM	1	20	24	3	0	48	16	0	0	0	0	0	0	10	180		
7:30AM	1	18	21	0	0	40	19	0	0	0	0	0	0	19	237		
7:45AM	8	29	19	0	0	56	17	0	0	0	0	0	0	25	245		
Hourly Total	11	75	78	4	0	168	57	0	0	0	0	0	0	60	797		
8:00AM	16	25	21	0	0	62	14	0	0	0	0	0	0	13	258		
8:15AM	10	11	14	1	0	36	11	0	0	0	0	0	0	16	192		
8:30AM	7	19	18	1	0	45	17	0	0	0	0	0	0	15	185		
8:45AM	11	15	18	1	0	45	16	0	0	0	0	0	0	22	178		
Hourly Total	44	70	71	3	0	188	58	0	0	0	0	0	0	66	813		
9:00AM	9	19	19	1	0	48	15	0	0	0	0	0	0	18	182		
9:15AM	4	18	15	2	0	39	27	0	0	0	0	0	0	29	156		
9:30AM	4	15	11	2	0	32	22	0	0	0	0	0	0	27	168		
9:45AM	6	18	15	2	0	41	25	0	0	0	0	0	0	24	184		
Hourly Total	23	70	60	7	0	160	89	0	0	0	0	0	0	98	690		
2:00PM	13	12	26	1	0	52	35	0	0	0	0	0	0	30	230		
2:15PM	20	20	30	5	0	75	28	0	0	0	0	0	0	25	251		
2:30PM	8	12	21	2	0	43	43	0	0	0	0	0	0	29	230		
2:45PM	12	21	32	1	0	66	59	0	0	0	0	0	0	44	251		
Hourly Total	53	65	109	9	0	236	165	0	0	0	0	0	0	128	962		
3:00PM	5	24	25	2	0	56	45	0	0	0	0	0	0	45	257		
3:15PM	9	14	41	3	0	67	44	0	0	0	0	0	0	39	270		
3:30PM	2	25	37	3	0	67	35	0	0	0	0	0	0	40	273		
3:45PM	12	29	35	2	0	78	43	0	0	0	0	0	0	43	274		
Hourly Total	28	92	138	10	0	268	167	0	0	0	0	0	0	167	1074		
4:00PM	8	21	24	3	0	56	41	0	0	0	0	0	0	29	282		
4:15PM	9	23	35	4	0	71	27	0	0	0	0	0	0	25	276		
4:30PM	7	33	29	3	0	72	29	0	0	0	0	0	0	33	293		
4:45PM	6	22	38	4	0	70	21	0	0	0	0	0	0	26	251		
Hourly Total	30	99	126	14	0	269	118	0	0	0	0	0	0	113	1102		
5:00PM	4	32	40	4	0	80	26	0	0	0	0	0	0	44	296		
5:15PM	6	21	55	4	0	86	28	0	0	0	0	0	0	34	288		
5:30PM	7	26	41	2	0	76	25	0	0	0	0	0	0	35	278		
5:45PM	7	18	34	2	0	61	23	0	0	0	0	0	0	32	247		
Hourly Total	24	97	170	12	0	303	102	0	0	0	0	0	0	145	1109		
2023-04-15 10:00AM	3	12	30	1	0	46	22	0	0	0	0	0	0	21	180		
10:15AM	2	7	20	0	0	29	19	0	0	0	0	0	0	27	166		
10:30AM	4	21	22	1	0	48	24	0	0	0	0	0	0	22	209		
10:45AM	16	17	20	6	0	59	28	0	0	0	0	0	0	31	219		
Hourly Total	25	57	92	8	0	182	93	0	0	0	0	0	0	101	774		
11:00AM	3	9	30	1	0	43	10	0	0	0	0	0	0	16	217		
11:15AM	4	16	19	0	0	39	18	0	0	0	0	0	0	22	196		
11:30AM	8	17	24	2	1	52	20	0	0	0	0	0	0	18	181		
11:45AM	4	20	39	3	0	66	15	0	0	0	0	0	0	15	221		
Hourly Total	19	62	112	6	1	200	63	0	0	0	0	0	0	71	815		
12:00PM	2	20	25	1	0	48	16	0	0	0	0	0	0	26	264		
12:15PM	8	23	22	1	0	54	18	0	0	0	0	0	0	8	250		

Leg Direction	Buffum Street Eastbound								Baldwin Street Southeastbound						Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*	
12:30PM	4	11	29	2	0	46	13	0	0	0	0	0	0	16	227
12:45PM	4	18	28	3	0	53	18	0	0	0	0	0	0	15	232
Hourly Total	18	72	104	7	0	201	65	0	0	0	0	0	0	65	973
1:00PM	5	16	29	1	0	51	22	0	1	0	0	0	1	26	218
1:15PM	7	12	30	3	0	52	23	0	0	0	0	0	0	19	217
1:30PM	14	16	43	1	0	74	13	0	0	0	0	0	0	20	252
1:45PM	6	13	36	1	0	56	11	0	0	0	0	0	0	15	208
Hourly Total	32	57	138	6	0	233	69	0	1	0	0	0	1	80	895
Total	309	851	1247	89	2	2498	1058	0	1	0	1	0	2	1118	10432
% Approach	12.4%	34.1%	49.9%	3.6%	0.1%	-	-	0%	50.0%	0%	50.0%	0%	-	-	-
% Total	3.0%	8.2%	12.0%	0.9%	0%	23.9%	-	0%	0%	0%	0%	0%	0%	-	-
Motorcycles	0	2	10	1	0	13	-	0	0	0	0	0	0	-	68
% Motorcycles	0%	0.2%	0.8%	1.1%	0%	0.5%	-	0%	0%	0%	0%	0%	0%	-	0.7%
Lights	307	830	1196	84	2	2419	-	0	1	0	0	0	1	-	10083
% Lights	99.4%	97.5%	95.9%	94.4%	100%	96.8%	-	0%	100%	0%	0%	0%	50.0%	-	96.7%
Single-Unit Trucks	1	4	17	1	0	23	-	0	0	0	0	0	0	-	95
% Single-Unit Trucks	0.3%	0.5%	1.4%	1.1%	0%	0.9%	-	0%	0%	0%	0%	0%	0%	-	0.9%
Articulated Trucks	1	2	1	0	0	4	-	0	0	0	0	0	0	-	10
% Articulated Trucks	0.3%	0.2%	0.1%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	0%	-	0.1%
Buses	0	13	13	3	0	29	-	0	0	0	0	0	0	-	152
% Buses	0%	1.5%	1.0%	3.4%	0%	1.2%	-	0%	0%	0%	0%	0%	0%	-	1.5%
Bicycles on Road	0	0	10	0	0	10	-	0	0	0	1	0	1	-	24
% Bicycles on Road	0%	0%	0.8%	0%	0%	0.4%	-	0%	0%	0%	100%	0%	50.0%	-	0.2%
Pedestrians	-	-	-	-	-	-	1027	-	-	-	-	-	-	1094	-
% Pedestrians	-	-	-	-	-	-	97.1%	-	-	-	-	-	-	97.9%	-
Bicycles on Crosswalk	-	-	-	-	-	-	31	-	-	-	-	-	-	24	-
% Bicycles on Crosswalk	-	-	-	-	-	-	2.9%	-	-	-	-	-	-	2.1%	-

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Thu Apr 13, 2023

AM Peak (Apr 13 2023 7:30AM - 8:30 AM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Union Street Southbound								Silsbee Street Westbound								Union Street Northbound							
	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*			
2023-04-13 7:30AM	3	14	69	25	0	111	31	0	0	0	0	0	0	2	13	62	8	3	0	86	4			
7:45AM	3	17	62	21	0	103	24	0	0	0	0	0	0	5	14	54	15	3	0	86	6			
8:00AM	6	22	76	22	0	126	6	0	0	0	0	0	0	4	21	45	4	0	0	70	4			
8:15AM	5	22	51	19	0	97	3	0	0	0	0	0	0	3	11	38	6	4	0	59	8			
Total	17	75	258	87	0	437	64	0	0	0	0	0	0	14	59	199	33	10	0	301	22			
% Approach	3.9%	17.2%	59.0%	19.9%	0%	-	-	0%	0%	0%	0%	0%	-	-	19.6%	66.1%	11.0%	3.3%	0%	-	-			
% Total	1.8%	8.0%	27.7%	9.3%	0%	46.9%	-	0%	0%	0%	0%	0%	0%	-	6.3%	21.4%	3.5%	1.1%	0%	32.3%	-			
PHF	0.708	0.841	0.845	0.870	-	0.863	-	-	-	-	-	-	-	-	0.702	0.802	0.550	0.625	-	0.875	-			
Motorcycles	0	0	3	0	0	3	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-			
% Motorcycles	0%	0%	1.2%	0%	0%	0.7%	-	0%	0%	0%	0%	0%	-	-	0%	0.5%	0%	0%	0%	0.3%	-			
Lights	17	71	247	86	0	421	-	0	0	0	0	0	0	-	59	189	33	10	0	291	-			
% Lights	100%	94.7%	95.7%	98.9%	0%	96.3%	-	0%	0%	0%	0%	0%	-	-	100%	95.0%	100%	100%	0%	96.7%	-			
Single-Unit Trucks	0	1	3	0	0	4	-	0	0	0	0	0	0	-	0	3	0	0	0	3	-			
% Single-Unit Trucks	0%	1.3%	1.2%	0%	0%	0.9%	-	0%	0%	0%	0%	0%	-	-	0%	1.5%	0%	0%	0%	1.0%	-			
Articulated Trucks	0	0	1	0	0	1	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-			
% Articulated Trucks	0%	0%	0.4%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	0%	-			
Buses	0	2	3	1	0	6	-	0	0	0	0	0	0	-	0	6	0	0	0	6	-			
% Buses	0%	2.7%	1.2%	1.1%	0%	1.4%	-	0%	0%	0%	0%	0%	-	-	0%	3.0%	0%	0%	0%	2.0%	-			
Bicycles on Road	0	1	1	0	0	2	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-			
% Bicycles on Road	0%	1.3%	0.4%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	0%	-			
Pedestrians	-	-	-	-	-	-	63	-	-	-	-	-	14	-	-	-	-	-	-	22				
% Pedestrians	-	-	-	-	-	-	98.4%	-	-	-	-	-	100%	-	-	-	-	-	-	100%				
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	-	0				
% Bicycles on Crosswalk	-	-	-	-	-	-	1.6%	-	-	-	-	-	0%	-	-	-	-	-	-	0%				

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Thu Apr 13, 2023

AM Peak (Apr 13 2023 7:30AM - 8:30 AM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Buffum Street Eastbound							Baldwin Street Southeastbound							Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*	
2023-04-13 7:30AM	1	18	21	0	0	40	19	0	0	0	0	0	0	19	237
7:45AM	8	29	19	0	0	56	17	0	0	0	0	0	0	25	245
8:00AM	16	25	21	0	0	62	14	0	0	0	0	0	0	13	258
8:15AM	10	11	14	1	0	36	11	0	0	0	0	0	0	16	192
Total	35	83	75	1	0	194	61	0	0	0	0	0	0	73	932
% Approach	18.0%	42.8%	38.7%	0.5%	0%	-	-	0%	0%	0%	0%	0%	0%	-	-
% Total	3.8%	8.9%	8.0%	0.1%	0%	20.8%	-	0%	0%	0%	0%	0%	0%	-	-
PHF	0.547	0.716	0.893	0.250	-	0.782	-	-	-	-	-	-	-	-	0.901
Motorcycles	0	0	0	0	0	0	-	0	0	0	0	0	0	-	4
% Motorcycles	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0.4%
Lights	35	80	73	1	0	189	-	0	0	0	0	0	0	-	901
% Lights	100%	96.4%	97.3%	100%	0%	97.4%	-	0%	0%	0%	0%	0%	0%	-	96.7%
Single-Unit Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	7
% Single-Unit Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0.8%
Articulated Trucks	0	1	0	0	0	1	-	0	0	0	0	0	0	-	2
% Articulated Trucks	0%	1.2%	0%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	0%	-	0.2%
Buses	0	2	2	0	0	4	-	0	0	0	0	0	0	-	16
% Buses	0%	2.4%	2.7%	0%	0%	2.1%	-	0%	0%	0%	0%	0%	0%	-	1.7%
Bicycles on Road	0	0	0	0	0	0	-	0	0	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0.2%
Pedestrians	-	-	-	-	-	-	57	-	-	-	-	-	-	71	-
% Pedestrians	-	-	-	-	-	-	93.4%	-	-	-	-	-	-	97.3%	-
Bicycles on Crosswalk	-	-	-	-	-	-	4	-	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	-	-	-	6.6%	-	-	-	-	-	-	2.7%	-

*Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Thu Apr 13, 2023

PM Peak (Apr 13 2023 4:30PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Union Street Southbound								Silsbee Street Westbound								Union Street Northbound							
	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*			
2023-04-13 4:30PM	8	24	46	21	0	99	3	0	0	0	0	0	0	11	15	94	10	1	2	122	9			
4:45PM	1	9	49	19	0	78	5	0	0	0	0	0	0	9	7	83	11	2	0	103	3			
5:00PM	9	19	65	14	0	107	14	0	0	0	0	0	0	16	7	95	3	4	0	109	11			
5:15PM	9	16	48	19	0	92	5	0	0	0	0	0	0	11	14	90	4	2	0	110	18			
Total	27	68	208	73	0	376	27	0	0	0	0	0	0	47	43	362	28	9	2	444	41			
% Approach	7.2%	18.1%	55.3%	19.4%	0%	-	-	0%	0%	0%	0%	0%	-	-	9.7%	81.5%	6.3%	2.0%	0.5%	-	-			
% Total	2.4%	6.0%	18.4%	6.5%	0%	33.3%	-	0%	0%	0%	0%	0%	0%	-	3.8%	32.1%	2.5%	0.8%	0.2%	39.4%	-			
PHF	0.750	0.708	0.800	0.869	-	0.879	-	-	-	-	-	-	-	-	0.717	0.953	0.636	0.563	0.250	0.910	-			
Motorcycles	0	0	2	0	0	2	-	0	0	0	0	0	0	-	0	4	0	0	0	4	-			
% Motorcycles	0%	0%	1.0%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	-	0%	1.1%	0%	0%	0%	0.9%	-			
Lights	26	66	201	71	0	364	-	0	0	0	0	0	0	-	42	351	28	9	2	432	-			
% Lights	96.3%	97.1%	96.6%	97.3%	0%	96.8%	-	0%	0%	0%	0%	0%	-	-	97.7%	97.0%	100%	100%	100%	97.3%	-			
Single-Unit Trucks	1	0	2	1	0	4	-	0	0	0	0	0	0	-	0	2	0	0	0	2	-			
% Single-Unit Trucks	3.7%	0%	1.0%	1.4%	0%	1.1%	-	0%	0%	0%	0%	0%	-	-	0%	0.6%	0%	0%	0%	0.5%	-			
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-			
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	0%	-			
Buses	0	2	3	1	0	6	-	0	0	0	0	0	0	-	1	5	0	0	0	6	-			
% Buses	0%	2.9%	1.4%	1.4%	0%	1.6%	-	0%	0%	0%	0%	0%	-	-	2.3%	1.4%	0%	0%	0%	1.4%	-			
Bicycles on Road	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-			
% Bicycles on Road	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	0%	-			
Pedestrians	-	-	-	-	-	-	26	-	-	-	-	-	-	41	-	-	-	-	-	-	41			
% Pedestrians	-	-	-	-	-	-	96.3%	-	-	-	-	-	-	87.2%	-	-	-	-	-	-	100%			
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	6	-	-	-	-	-	-	0			
% Bicycles on Crosswalk	-	-	-	-	-	-	3.7%	-	-	-	-	-	-	12.8%	-	-	-	-	-	-	0%			

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Thu Apr 13, 2023

PM Peak (Apr 13 2023 4:30PM - 5:30 PM) - Overall Peak Hour

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Buffum Street Eastbound							Baldwin Street Southeastbound							Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*	
2023-04-13 4:30PM	7	33	29	3	0	72	29	0	0	0	0	0	0	33	293
4:45PM	6	22	38	4	0	70	21	0	0	0	0	0	0	26	251
5:00PM	4	32	40	4	0	80	26	0	0	0	0	0	0	44	296
5:15PM	6	21	55	4	0	86	28	0	0	0	0	0	0	34	288
Total	23	108	162	15	0	308	104	0	0	0	0	0	0	137	1128
% Approach	7.5%	35.1%	52.6%	4.9%	0%	-	-	0%	0%	0%	0%	0%	-	-	-
% Total	2.0%	9.6%	14.4%	1.3%	0%	27.3%	-	0%	0%	0%	0%	0%	0%	-	-
PHF	0.821	0.818	0.732	0.938	-	0.892	-	-	-	-	-	-	-	-	0.952
Motorcycles	0	1	2	0	0	3	-	0	0	0	0	0	0	-	9
% Motorcycles	0%	0.9%	1.2%	0%	0%	1.0%	-	0%	0%	0%	0%	0%	-	-	0.8%
Lights	23	103	157	15	0	298	-	0	0	0	0	0	0	-	1094
% Lights	100%	95.4%	96.9%	100%	0%	96.8%	-	0%	0%	0%	0%	0%	-	-	97.0%
Single-Unit Trucks	0	0	1	0	0	1	-	0	0	0	0	0	0	-	7
% Single-Unit Trucks	0%	0%	0.6%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	-	0.6%
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%
Buses	0	4	1	0	0	5	-	0	0	0	0	0	0	-	17
% Buses	0%	3.7%	0.6%	0%	0%	1.6%	-	0%	0%	0%	0%	0%	-	-	1.5%
Bicycles on Road	0	0	1	0	0	1	-	0	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0.6%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	-	0.1%
Pedestrians	-	-	-	-	-	-	99	-	-	-	-	-	-	133	-
% Pedestrians	-	-	-	-	-	-	95.2%	-	-	-	-	-	-	97.1%	-
Bicycles on Crosswalk	-	-	-	-	-	-	5	-	-	-	-	-	-	4	-
% Bicycles on Crosswalk	-	-	-	-	-	-	4.8%	-	-	-	-	-	-	2.9%	-

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Sat Apr 15, 2023

AM Peak (WKND) (Apr 15 2023 10AM - 11 AM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Union Street Southbound								Silsbee Street Westbound								Union Street Northbound							
	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*			
2023-04-15 10:00AM	7	10	36	8	0	61	4	0	0	0	0	0	0	13	10	53	7	2	1	73	3			
10:15AM	3	10	47	15	1	76	6	0	0	0	0	0	0	8	7	47	5	1	1	61	3			
10:30AM	1	14	61	22	0	98	0	0	0	0	0	0	0	5	13	44	5	1	0	63	4			
10:45AM	4	15	47	19	0	85	3	0	0	0	0	0	0	7	16	48	6	4	1	75	3			
Total	15	49	191	64	1	320	13	0	0	0	0	0	0	33	46	192	23	8	3	272	13			
% Approach	4.7%	15.3%	59.7%	20.0%	0.3%	-	-	0%	0%	0%	0%	0%	-	-	16.9%	70.6%	8.5%	2.9%	1.1%	-	-			
% Total	1.9%	6.3%	24.7%	8.3%	0.1%	41.3%	-	0%	0%	0%	0%	0%	0%	-	5.9%	24.8%	3.0%	1.0%	0.4%	35.1%	-			
PHF	0.536	0.817	0.783	0.727	0.250	0.816	-	-	-	-	-	-	-	-	0.719	0.901	0.821	0.500	0.750	0.916	-			
Motorcycles	0	0	1	1	0	2	-	0	0	0	0	0	0	-	1	2	0	0	0	3	-			
% Motorcycles	0%	0%	0.5%	1.6%	0%	0.6%	-	0%	0%	0%	0%	0%	-	-	2.2%	1.0%	0%	0%	0%	1.1%	-			
Lights	14	47	189	61	1	312	-	0	0	0	0	0	0	-	45	186	23	8	3	265	-			
% Lights	93.3%	95.9%	99.0%	95.3%	100%	97.5%	-	0%	0%	0%	0%	0%	-	-	97.8%	96.9%	100%	100%	100%	97.4%	-			
Single-Unit Trucks	1	0	1	2	0	4	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-			
% Single-Unit Trucks	6.7%	0%	0.5%	3.1%	0%	1.3%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	0%	-			
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-			
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	0%	-			
Buses	0	2	0	0	0	2	-	0	0	0	0	0	0	-	0	3	0	0	0	3	-			
% Buses	0%	4.1%	0%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	-	0%	1.6%	0%	0%	0%	1.1%	-			
Bicycles on Road	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-			
% Bicycles on Road	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0.5%	0%	0%	0%	0.4%	-			
Pedestrians	-	-	-	-	-	-	13	-	-	-	-	-	33	-	-	-	-	-	-	-	12			
% Pedestrians	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-	92.3%			
Bicycles on Crosswalk	-	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	-	1			
% Bicycles on Crosswalk	-	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	-	7.7%			

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Sat Apr 15, 2023

AM Peak (WKND) (Apr 15 2023 10AM - 11 AM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Buffum Street Eastbound							Baldwin Street Southeastbound							Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*	
2023-04-15 10:00AM	3	12	30	1	0	46	22	0	0	0	0	0	0	21	180
10:15AM	2	7	20	0	0	29	19	0	0	0	0	0	0	27	166
10:30AM	4	21	22	1	0	48	24	0	0	0	0	0	0	22	209
10:45AM	16	17	20	6	0	59	28	0	0	0	0	0	0	31	219
Total	25	57	92	8	0	182	93	0	0	0	0	0	0	101	774
% Approach	13.7%	31.3%	50.5%	4.4%	0%	-	-	0%	0%	0%	0%	0%	-	-	-
% Total	3.2%	7.4%	11.9%	1.0%	0%	23.5%	-	0%	0%	0%	0%	0%	0%	-	-
PHF	0.391	0.679	0.767	0.333	-	0.771	-	-	-	-	-	-	-	-	0.886
Motorcycles	0	0	0	0	0	0	-	0	0	0	0	0	0	-	5
% Motorcycles	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0.6%
Lights	25	57	90	8	0	180	-	0	0	0	0	0	0	-	757
% Lights	100%	100%	97.8%	100%	0%	98.9%	-	0%	0%	0%	0%	0%	-	-	97.8%
Single-Unit Trucks	0	0	2	0	0	2	-	0	0	0	0	0	0	-	6
% Single-Unit Trucks	0%	0%	2.2%	0%	0%	1.1%	-	0%	0%	0%	0%	0%	-	-	0.8%
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%
Buses	0	0	0	0	0	0	-	0	0	0	0	0	0	-	5
% Buses	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0.6%
Bicycles on Road	0	0	0	0	0	0	-	0	0	0	0	0	0	-	1
% Bicycles on Road	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0.1%
Pedestrians	-	-	-	-	-	-	90	-	-	-	-	-	-	101	-
% Pedestrians	-	-	-	-	-	-	96.8%	-	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	-	3	-	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	3.2%	-	-	-	-	-	-	0%	-

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Sat Apr 15, 2023

Midday Peak (WKND) (Apr 15 2023 12PM - 1 PM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Union Street Southbound							Silsbee Street Westbound							Union Street Northbound						
Time	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*
2023-04-15 12:00PM	4	20	56	12	0	92	6	1	0	0	1	0	2	7	14	91	13	4	0	122	2
12:15PM	9	19	45	23	0	96	3	0	0	0	0	0	0	9	12	80	6	1	1	100	6
12:30PM	8	17	39	11	0	75	6	0	0	0	0	0	0	13	14	80	9	3	0	106	4
12:45PM	9	14	52	22	0	97	9	0	0	0	0	0	0	10	14	61	5	2	0	82	4
Total	30	70	192	68	0	360	24	1	0	0	1	0	2	39	54	312	33	10	1	410	16
% Approach	8.3%	19.4%	53.3%	18.9%	0%	-	-	50.0%	0%	0%	50.0%	0%	-	-	13.2%	76.1%	8.0%	2.4%	0.2%	-	-
% Total	3.1%	7.2%	19.7%	7.0%	0%	37.0%	-	0.1%	0%	0%	0.1%	0%	0.2%	-	5.5%	32.1%	3.4%	1.0%	0.1%	42.1%	-
PHF	0.806	0.875	0.853	0.739	-	0.932	-	-	-	-	-	-	-	-	0.964	0.857	0.635	0.625	0.250	0.840	-
Motorcycles	1	0	2	1	0	4	-	0	0	0	0	0	0	-	0	0	0	0	0	0	0
% Motorcycles	3.3%	0%	1.0%	1.5%	0%	1.1%	-	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	0%
Lights	28	68	186	67	0	349	-	0	0	0	0	0	0	-	54	309	33	10	1	407	-
% Lights	93.3%	97.1%	96.9%	98.5%	0%	96.9%	-	0%	0%	0%	0%	0%	0%	-	100%	99.0%	100%	100%	100%	99.3%	-
Single-Unit Trucks	0	0	3	0	0	3	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-
% Single-Unit Trucks	0%	0%	1.6%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0%	0.2%	-
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-
Buses	0	2	0	0	0	2	-	0	0	0	0	0	0	-	0	2	0	0	0	2	-
% Buses	0%	2.9%	0%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0%	0.5%	-
Bicycles on Road	1	0	1	0	0	2	-	1	0	0	1	0	2	-	0	0	0	0	0	0	-
% Bicycles on Road	3.3%	0%	0.5%	0%	0%	0.6%	-	100%	0%	0%	100%	0%	100%	-	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	-	-	23	-	-	-	-	-	-	39	-	-	-	-	-	-	16
% Pedestrians	-	-	-	-	-	-	95.8%	-	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	-	4.2%	-	-	-	-	-	-	0%	-	-	-	-	-	-	0%

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Sat Apr 15, 2023

Midday Peak (WKND) (Apr 15 2023 12PM - 1 PM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Buffum Street Eastbound							Baldwin Street Southeastbound							Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*	
2023-04-15 12:00PM	2	20	25	1	0	48	16	0	0	0	0	0	0	26	264
12:15PM	8	23	22	1	0	54	18	0	0	0	0	0	0	8	250
12:30PM	4	11	29	2	0	46	13	0	0	0	0	0	0	16	227
12:45PM	4	18	28	3	0	53	18	0	0	0	0	0	0	15	232
Total	18	72	104	7	0	201	65	0	0	0	0	0	0	65	973
% Approach	9.0%	35.8%	51.7%	3.5%	0%	-	-	0%	0%	0%	0%	0%	-	-	-
% Total	1.8%	7.4%	10.7%	0.7%	0%	20.7%	-	0%	0%	0%	0%	0%	0%	-	-
PHF	0.563	0.783	0.897	0.583	-	0.931	-	-	-	-	-	-	-	-	0.925
Motorcycles	0	0	0	0	0	0	-	0	0	0	0	0	0	-	4
% Motorcycles	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0.4%
Lights	18	71	104	5	0	198	-	0	0	0	0	0	0	-	954
% Lights	100%	98.6%	100%	71.4%	0%	98.5%	-	0%	0%	0%	0%	0%	-	-	98.0%
Single-Unit Trucks	0	1	0	0	0	1	-	0	0	0	0	0	0	-	5
% Single-Unit Trucks	0%	1.4%	0%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	-	0.5%
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%
Buses	0	0	0	2	0	2	-	0	0	0	0	0	0	-	6
% Buses	0%	0%	0%	28.6%	0%	1.0%	-	0%	0%	0%	0%	0%	-	-	0.6%
Bicycles on Road	0	0	0	0	0	0	-	0	0	0	0	0	0	-	4
% Bicycles on Road	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0.4%
Pedestrians	-	-	-	-	-	-	62	-	-	-	-	-	-	64	-
% Pedestrians	-	-	-	-	-	-	95.4%	-	-	-	-	-	-	98.5%	-
Bicycles on Crosswalk	-	-	-	-	-	-	3	-	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	-	-	4.6%	-	-	-	-	-	-	1.5%	-

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Sat Apr 15, 2023

PM Peak (WKND) (Apr 15 2023 1PM - 2 PM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Union Street Southbound								Silsbee Street Westbound								Union Street Northbound							
	HR	R	T	L	U	App	Ped*	R	BR	T	L	U	App	Ped*	R	T	BL	L	U	App	Ped*			
2023-04-15 1:00PM	9	13	48	16	0	86	10	0	0	0	0	0	0	16	9	63	6	1	1	80	5			
1:15PM	5	17	50	13	0	85	1	0	0	0	0	0	0	25	11	60	8	1	0	80	4			
1:30PM	7	26	55	16	1	105	9	0	0	0	0	0	0	19	9	52	5	6	1	73	2			
1:45PM	6	11	33	14	1	65	11	0	0	0	0	0	0	16	9	63	8	6	1	87	4			
Total	27	67	186	59	2	341	31	0	0	0	0	0	0	76	38	238	27	14	3	320	15			
% Approach	7.9%	19.6%	54.5%	17.3%	0.6%	-	-	0%	0%	0%	0%	0%	-	-	11.9%	74.4%	8.4%	4.4%	0.9%	-	-			
% Total	3.0%	7.5%	20.8%	6.6%	0.2%	38.1%	-	0%	0%	0%	0%	0%	0%	-	4.2%	26.6%	3.0%	1.6%	0.3%	35.8%	-			
PHF	0.750	0.644	0.836	0.922	0.500	0.807	-	-	-	-	-	-	-	-	0.864	0.940	0.844	0.583	0.750	0.917	-			
Motorcycles	0	1	0	0	0	1	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-			
% Motorcycles	0%	1.5%	0%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	-	0%	0.4%	0%	0%	0%	0.3%	-			
Lights	27	63	182	58	2	332	-	0	0	0	0	0	0	-	38	229	27	13	3	310	-			
% Lights	100%	94.0%	97.8%	98.3%	100%	97.4%	-	0%	0%	0%	0%	0%	-	-	100%	96.2%	100%	92.9%	100%	96.9%	-			
Single-Unit Trucks	0	0	1	1	0	2	-	0	0	0	0	0	0	-	0	2	0	1	0	3	-			
% Single-Unit Trucks	0%	0%	0.5%	1.7%	0%	0.6%	-	0%	0%	0%	0%	0%	-	-	0%	0.8%	0%	7.1%	0%	0.9%	-			
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-			
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-	0%	0.4%	0%	0%	0%	0.3%	-			
Buses	0	3	1	0	0	4	-	0	0	0	0	0	0	-	0	4	0	0	0	4	-			
% Buses	0%	4.5%	0.5%	0%	0%	1.2%	-	0%	0%	0%	0%	0%	-	-	0%	1.7%	0%	0%	0%	1.3%	-			
Bicycles on Road	0	0	2	0	0	2	-	0	0	0	0	0	0	-	0	1	0	0	0	1	-			
% Bicycles on Road	0%	0%	1.1%	0%	0%	0.6%	-	0%	0%	0%	0%	0%	-	-	0%	0.4%	0%	0%	0%	0.3%	-			
Pedestrians	-	-	-	-	-	-	29	-	-	-	-	-	-	76	-	-	-	-	-	-	-	15		
% Pedestrians	-	-	-	-	-	-	93.5%	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	100%		
Bicycles on Crosswalk	-	-	-	-	-	-	2	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0		
% Bicycles on Crosswalk	-	-	-	-	-	-	6.5%	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	0%		

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (3) Freeman Square TMC - TMC

Sat Apr 15, 2023

PM Peak (WKND) (Apr 15 2023 1PM - 2 PM)

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

All Movements

ID: 1055363, Location: 42.465432, -70.943121

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Buffum Street Eastbound							Baldwin Street Southeastbound							Int
	R	T	L	HL	U	App	Ped*	HR	BR	BL	HL	U	App	Ped*	
2023-04-15 1:00PM	5	16	29	1	0	51	22	0	1	0	0	0	1	26	218
1:15PM	7	12	30	3	0	52	23	0	0	0	0	0	0	19	217
1:30PM	14	16	43	1	0	74	13	0	0	0	0	0	0	20	252
1:45PM	6	13	36	1	0	56	11	0	0	0	0	0	0	15	208
Total	32	57	138	6	0	233	69	0	1	0	0	0	1	80	895
% Approach	13.7%	24.5%	59.2%	2.6%	0%	-	-	0%	100%	0%	0%	0%	-	-	-
% Total	3.6%	6.4%	15.4%	0.7%	0%	26.0%	-	0%	0.1%	0%	0%	0%	0.1%	-	-
PHF	0.571	0.891	0.802	0.500	-	0.787	-	-	0.250	-	-	-	0.250	-	0.885
Motorcycles	0	0	1	0	0	1	-	0	0	0	0	0	0	-	3
% Motorcycles	0%	0%	0.7%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	0%	-	0.3%
Lights	32	57	136	6	0	231	-	0	1	0	0	0	1	-	874
% Lights	100%	100%	98.6%	100%	0%	99.1%	-	0%	100%	0%	0%	0%	100%	-	97.7%
Single-Unit Trucks	0	0	1	0	0	1	-	0	0	0	0	0	0	-	6
% Single-Unit Trucks	0%	0%	0.7%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	0%	-	0.7%
Articulated Trucks	0	0	0	0	0	0	-	0	0	0	0	0	0	-	1
% Articulated Trucks	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0.1%
Buses	0	0	0	0	0	0	-	0	0	0	0	0	0	-	8
% Buses	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0.9%
Bicycles on Road	0	0	0	0	0	0	-	0	0	0	0	0	0	-	3
% Bicycles on Road	0%	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	0%	-	0.3%
Pedestrians	-	-	-	-	-	-	68	-	-	-	-	-	-	78	-
% Pedestrians	-	-	-	-	-	-	98.6%	-	-	-	-	-	-	97.5%	-
Bicycles on Crosswalk	-	-	-	-	-	-	1	-	-	-	-	-	-	2	-
% Bicycles on Crosswalk	-	-	-	-	-	-	1.4%	-	-	-	-	-	-	2.5%	-

* Pedestrians and Bicycles on Crosswalk. BL: Bear left, BR: Bear right, HL: Hard left, HR: Hard right, L: Left, R: Right, T: Thru, U: U-Turn

239292 (2) Washington St @ Pathway TMC - TMC

Thu Apr 13, 2023

Full Length (6 AM-10 AM, 2 PM-6 PM, 10 AM-2 PM)

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

All Movements

ID: 1055362, Location: 42.467684, -70.953348

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
Time																									
2023-04-13 6:00AM	0	0	0	0	0	4	0	91	0	0	91	0	0	0	0	0	0	5	0	31	0	2	33	1	124
6:15AM	0	0	0	0	0	1	0	83	0	0	83	0	0	0	0	0	0	1	0	37	0	0	37	0	120
6:30AM	0	0	0	0	0	4	0	92	0	0	92	0	0	0	0	0	0	3	0	49	0	0	49	2	141
6:45AM	0	0	0	0	0	1	0	86	0	0	86	0	0	0	0	0	0	1	0	53	0	0	53	0	139
Hourly Total	0	0	0	0	0	10	0	352	0	0	352	0	0	0	0	0	0	10	0	170	0	2	172	3	524
7:00AM	0	0	0	0	0	1	0	96	0	0	96	0	0	0	0	0	0	4	0	77	0	0	77	0	173
7:15AM	0	0	0	0	0	2	0	103	0	0	103	0	0	0	0	0	0	8	0	95	0	0	95	1	198
7:30AM	0	0	0	0	0	6	0	98	0	0	98	0	0	0	0	0	0	4	1	106	0	0	107	5	205
7:45AM	0	0	0	0	0	17	0	135	0	0	135	1	0	0	0	0	0	1	0	100	0	0	100	11	235
Hourly Total	0	0	0	0	0	26	0	432	0	0	432	1	0	0	0	0	0	17	1	378	0	0	379	17	811
8:00AM	0	0	0	0	0	6	0	116	0	0	116	0	0	0	0	0	0	12	0	109	0	0	109	6	225
8:15AM	0	0	0	0	0	18	0	116	0	0	116	0	0	0	0	0	0	7	0	82	1	0	83	15	199
8:30AM	0	0	0	0	0	6	0	85	0	0	85	0	0	0	0	0	0	8	0	88	0	0	88	1	173
8:45AM	0	0	0	0	0	4	0	88	0	0	88	0	0	0	0	0	0	5	0	88	0	0	88	2	176
Hourly Total	0	0	0	0	0	34	0	405	0	0	405	0	0	0	0	0	0	32	0	367	1	0	368	24	773
9:00AM	1	0	0	0	1	2	0	87	0	0	87	0	0	0	0	0	0	0	0	94	0	0	94	1	182
9:15AM	0	0	0	0	0	1	0	87	0	0	87	0	0	0	0	0	0	9	0	69	0	1	70	0	157
9:30AM	0	0	0	0	0	14	0	80	0	0	80	0	0	0	0	0	0	1	0	81	1	0	82	0	162
9:45AM	0	0	0	0	0	7	0	73	0	0	73	0	0	0	0	0	0	1	0	84	0	0	84	1	157
Hourly Total	1	0	0	0	1	24	0	327	0	0	327	0	0	0	0	0	0	11	0	328	1	1	330	2	658
2:00PM	0	0	0	0	0	2	0	138	0	0	138	1	0	0	0	0	0	9	0	71	0	0	71	3	209
2:15PM	0	0	0	0	0	15	0	113	0	0	113	0	0	0	0	0	0	19	0	57	0	0	57	12	170
2:30PM	0	0	0	0	0	5	0	117	0	1	118	2	0	0	0	0	0	10	0	22	0	0	22	0	140
2:45PM	0	0	0	0	0	9	0	110	0	0	110	1	0	0	0	0	0	6	0	24	0	0	24	2	134
Hourly Total	0	0	0	0	0	31	0	478	0	1	479	4	0	0	0	0	0	44	0	174	0	0	174	17	653
3:00PM	0	0	0	0	0	14	0	141	0	0	141	0	0	0	0	0	0	8	0	95	0	0	95	13	236
3:15PM	0	0	0	0	0	5	0	112	0	0	112	1	0	0	0	0	0	7	0	81	0	0	81	6	193
3:30PM	0	0	0	0	0	11	0	114	0	0	114	0	0	0	0	0	0	7	0	75	0	0	75	5	189
3:45PM	0	0	0	0	0	13	0	143	0	0	143	1	0	0	0	0	0	14	0	82	0	0	82	7	225
Hourly Total	0	0	0	0	0	43	0	510	0	0	510	2	0	0	0	0	0	36	0	333	0	0	333	31	843
4:00PM	0	0	0	0	0	12	0	140	0	0	140	0	0	0	0	0	0	17	0	71	1	0	72	9	212
4:15PM	0	0	0	0	0	7	0	133	0	0	133	0	0	0	0	0	0	7	0	92	0	0	92	2	225
4:30PM	0	0	0	0	0	12	0	154	0	0	154	0	0	0	0	0	0	8	0	97	0	0	97	6	251
4:45PM	0	0	0	0	0	9	0	121	0	0	121	0	0	0	0	0	0	7	0	94	0	0	94	2	215
Hourly Total	0	0	0	0	0	40	0	548	0	0	548	0	0	0	0	0	0	39	0	354	1	0	355	19	903
5:00PM	1	0	0	0	1	7	0	127	0	0	127	0	0	0	0	0	0	12	0	79	0	0	79	0	207
5:15PM	0	0	0	0	0	7	0	132	0	0	132	2	0	0	0	0	0	13	0	93	0	0	93	0	225
5:30PM	1	0	0	0	1	6	0	134	0	0	134	0	0	0	0	0	0	7	0	85	0	0	85	3	220
5:45PM	0	0	0	0	0	9	0	112	0	0	112	0	0	0	0	0	0	7	0	77	0	0	77	3	189
Hourly Total	2	0	0	0	2	29	0	505	0	0	505	2	0	0	0	0	0	39	0	334	0	0	334	6	841
2023-04-15 10:00AM	0	0	0	0	0	6	0	88	0	0	88	1	0	0	0	0	0	5	0	73	0	0	73	2	161
10:15AM	1	0	0	0	1	8	0	89	0	0	89	1	0	0	0	0	0	9	0	44	0	0	44	2	134
10:30AM	0	0	0	0	0	6	0	97	0	0	97	1	0	0	0	0	0	7	0	68	0	0	68	1	165
10:45AM	0	0	0	0	0	8	0	87	0	0	87	0	0	0	0	0	0	2	0	93	1	0	94	1	181
Hourly Total	1	0	0	0	1	28	0	361	0	0	361	3	0	0	0	0	0	23	0	278	1	0	279	6	641
11:00AM	0	0	0	0	0	7	0	127	0	0	127	1	0	0	0	0	0	7	0	66	0	0	66	2	193
11:15AM	1	0	0	0	1	5	0	169	0	0	169	1	0	0	0	0	0	5	0	66	1	0	67	1	237
11:30AM	0	0	0	0	0	6	0	139	0	0	139	0	0	0	0	0	0	5	0	89	0	0	89	0	228
11:45AM	0	0	0	0	0	7	0	91	0	0	91	1	0	0	0	0	0	10	0	105	0	0	105	2	196
Hourly Total	1	0	0	0	1	25	0	526	0	0	526	3	0	0	0	0	0	27	0	326	1	0	327	5	854
12:00PM	0	0	1	0	1	10	0	103	0	0	103	0	0	0	0	0	0	2	0	79	0	0	79	1	183
12:15PM	0	0	0	0	0	4	0	101	0	0	101	0	0	0	0	0	0	10	0	61	0	0	61	0	162

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
12:30PM	0	0	0	0	0	2	0	97	0	0	97	1	0	0	0	0	0	7	0	79	0	0	79	2	176
12:45PM	0	0	0	0	0	10	0	73	0	0	73	0	0	0	0	0	0	6	0	81	0	0	81	2	154
Hourly Total	0	0	1	0	1	26	0	374	0	0	374	1	0	0	0	0	0	25	0	300	0	0	300	5	675
1:00PM	0	0	0	0	0	11	0	107	0	0	107	0	0	0	0	0	0	6	0	84	0	0	84	7	191
1:15PM	0	0	0	0	0	6	0	93	0	0	93	0	0	0	0	0	0	4	0	79	0	0	79	2	172
1:30PM	0	0	0	0	0	4	0	100	0	0	100	2	0	0	0	0	0	5	0	97	0	0	97	10	197
1:45PM	0	0	0	0	0	9	0	99	0	0	99	1	0	0	0	0	0	6	0	78	0	1	79	5	178
Hourly Total	0	0	0	0	0	30	0	399	0	0	399	3	0	0	0	0	0	21	0	338	0	1	339	24	738
Total	5	0	1	0	6	346	0	5217	0	1	5218	19	0	0	0	0	0	324	1	3680	5	4	3690	159	8914
% Approach	83.3%	0%	16.7%	0%	-	-	0%	100.0%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	99.7%	0.1%	0.1%	-	-	-
% Total	0.1%	0%	0%	0%	0.1%	-	0%	58.5%	0%	0%	58.5%	-	0%	0%	0%	0%	0%	-	0%	41.3%	0.1%	0%	41.4%	-	-
Motorcycles	0	0	0	0	0	-	0	35	0	0	35	-	0	0	0	0	0	-	0	21	0	0	21	-	56
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0.7%	0%	0%	0.7%	-	0%	0%	0%	0%	-	-	0%	0.6%	0%	0%	0.6%	-	0.6%
Lights	4	0	1	0	5	-	0	4999	0	1	5000	-	0	0	0	0	0	-	1	3536	5	4	3546	-	8551
% Lights	80.0%	0%	100%	0%	83.3%	-	0%	95.8%	0%	100%	95.8%	-	0%	0%	0%	0%	-	-	100%	96.1%	100%	100%	96.1%	-	95.9%
Single-Unit Trucks	0	0	0	0	0	-	0	93	0	0	93	-	0	0	0	0	0	-	0	69	0	0	69	-	162
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.8%	0%	0%	1.8%	-	0%	0%	0%	0%	-	-	0%	1.9%	0%	0%	1.9%	-	1.8%
Articulated Trucks	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	0	11	0	0	11	-	16
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0.1%	0%	0%	0.1%	-	0%	0%	0%	0%	-	-	0%	0.3%	0%	0%	0.3%	-	0.2%
Buses	0	0	0	0	0	-	0	69	0	0	69	-	0	0	0	0	0	-	0	36	0	0	36	-	105
% Buses	0%	0%	0%	0%	0%	-	0%	1.3%	0%	0%	1.3%	-	0%	0%	0%	0%	-	-	0%	1.0%	0%	0%	1.0%	-	1.2%
Bicycles on Road	1	0	0	0	1	-	0	16	0	0	16	-	0	0	0	0	0	-	0	7	0	0	7	-	24
% Bicycles on Road	20.0%	0%	0%	0%	16.7%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	-	-	0%	0.2%	0%	0%	0.2%	-	0.3%
Pedestrians	-	-	-	-	-	326	-	-	-	-	-	19	-	-	-	-	-	314	-	-	-	-	-	-	157
% Pedestrians	-	-	-	-	-	94.2%	-	-	-	-	-	100%	-	-	-	-	-	96.9%	-	-	-	-	-	-	98.7%
Bicycles on Crosswalk	-	-	-	-	-	20	-	-	-	-	-	0	-	-	-	-	-	10	-	-	-	-	-	-	2
% Bicycles on Crosswalk	-	-	-	-	-	5.8%	-	-	-	-	-	0%	-	-	-	-	-	3.1%	-	-	-	-	-	-	1.3%

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

239292 (2) Washington St @ Pathway TMC - TMC

Thu Apr 13, 2023

AM Peak (Apr 13 2023 7:15AM - 8:15 AM)

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

All Movements

ID: 1055362, Location: 42.467684, -70.953348

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-13 7:15AM	0	0	0	0	0	2	0	103	0	0	103	0	0	0	0	0	0	8	0	95	0	0	95	1	198
7:30AM	0	0	0	0	0	6	0	98	0	0	98	0	0	0	0	0	0	4	1	106	0	0	107	5	205
7:45AM	0	0	0	0	0	17	0	135	0	0	135	1	0	0	0	0	0	1	0	100	0	0	100	11	235
8:00AM	0	0	0	0	0	6	0	116	0	0	116	0	0	0	0	0	0	12	0	109	0	0	109	6	225
Total	0	0	0	0	0	31	0	452	0	0	452	1	0	0	0	0	0	25	1	410	0	0	411	23	863
% Approach	0%	0%	0%	0%	0%	-	0%	100%	0%	0%	-	-	0%	0%	0%	0%	-	-	0.2%	99.8%	0%	0%	-	-	-
% Total	0%	0%	0%	0%	0%	-	0%	52.4%	0%	0%	52.4%	-	0%	0%	0%	0%	0%	-	0.1%	47.5%	0%	0%	47.6%	-	-
PHF	-	-	-	-	-	-	-	0.837	-	-	0.837	-	-	-	-	-	-	-	0.250	0.940	-	-	0.943	-	0.918
Motorcycles	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	-	-	0%	0.5%	0%	0%	0.5%	-	0.3%
Lights	0	0	0	0	0	-	0	430	0	0	430	-	0	0	0	0	0	-	1	393	0	0	394	-	824
% Lights	0%	0%	0%	0%	0%	-	0%	95.1%	0%	0%	95.1%	-	0%	0%	0%	0%	-	-	100%	95.9%	0%	0%	95.9%	-	95.5%
Single-Unit Trucks	0	0	0	0	0	-	0	6	0	0	6	-	0	0	0	0	0	-	0	8	0	0	8	-	14
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.3%	0%	0%	1.3%	-	0%	0%	0%	0%	-	-	0%	2.0%	0%	0%	1.9%	-	1.6%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	5	0	0	5	-	5
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-	0%	1.2%	0%	0%	1.2%	-	0.6%
Buses	0	0	0	0	0	-	0	15	0	0	15	-	0	0	0	0	0	-	0	2	0	0	2	-	17
% Buses	0%	0%	0%	0%	0%	-	0%	3.3%	0%	0%	3.3%	-	0%	0%	0%	0%	-	-	0%	0.5%	0%	0%	0.5%	-	2.0%
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	-	0%
Pedestrians	-	-	-	-	-	31	-	-	-	-	-	1	-	-	-	-	-	25	-	-	-	-	-	-	23
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	100%
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	-	0
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	-	0%

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

239292 (2) Washington St @ Pathway TMC - TMC

Thu Apr 13, 2023

PM Peak (Apr 13 2023 3:45PM - 4:45 PM) - Overall Peak Hour

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

All Movements

ID: 1055362, Location: 42.467684, -70.953348

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2, Hudson, MA, 01749, US

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-13 3:45PM	0	0	0	0	0	13	0	143	0	0	143	1	0	0	0	0	0	14	0	82	0	0	82	7	225
4:00PM	0	0	0	0	0	12	0	140	0	0	140	0	0	0	0	0	0	17	0	71	1	0	72	9	212
4:15PM	0	0	0	0	0	7	0	133	0	0	133	0	0	0	0	0	0	7	0	92	0	0	92	2	225
4:30PM	0	0	0	0	0	12	0	154	0	0	154	0	0	0	0	0	0	8	0	97	0	0	97	6	251
Total	0	0	0	0	0	44	0	570	0	0	570	1	0	0	0	0	0	46	0	342	1	0	343	24	913
% Approach	0%	0%	0%	0%	0%	-	0%	100%	0%	0%	-	0%	0%	0%	0%	-	0%	99.7%	0.3%	0%	-	-	-	-	
% Total	0%	0%	0%	0%	0%	-	0%	62.4%	0%	0%	62.4%	-	0%	0%	0%	0%	0%	-	0%	37.5%	0.1%	0%	37.6%	-	-
PHF	-	-	-	-	-	-	-	0.922	-	-	0.922	-	-	-	-	-	-	-	-	0.881	0.250	-	0.884	-	0.907
Motorcycles	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	3	0	0	3	-	4
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	0%	-	0%	0.9%	0%	0%	0.9%	-	0.4%
Lights	0	0	0	0	0	-	0	552	0	0	552	-	0	0	0	0	0	-	0	326	1	0	327	-	879
% Lights	0%	0%	0%	0%	0%	-	0%	96.8%	0%	0%	96.8%	-	0%	0%	0%	0%	0%	-	0%	95.3%	100%	0%	95.3%	-	96.3%
Single-Unit Trucks	0	0	0	0	0	-	0	6	0	0	6	-	0	0	0	0	0	-	0	8	0	0	8	-	14
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.1%	0%	0%	1.1%	-	0%	0%	0%	0%	0%	-	0%	2.3%	0%	0%	2.3%	-	1.5%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	9	0	0	9	-	0	0	0	0	0	-	0	5	0	0	5	-	14
% Buses	0%	0%	0%	0%	0%	-	0%	1.6%	0%	0%	1.6%	-	0%	0%	0%	0%	0%	-	0%	1.5%	0%	0%	1.5%	-	1.5%
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0.2%
Pedestrians	-	-	-	-	-	42	-	-	-	-	-	1	-	-	-	-	-	46	-	-	-	-	-	24	-
% Pedestrians	-	-	-	-	-	95.5%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	4.5%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

239292 (2) Washington St @ Pathway TMC - TMC

Sat Apr 15, 2023

AM Peak (WKND) (Apr 15 2023 10AM - 11 AM)

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

All Movements

ID: 1055362, Location: 42.467684, -70.953348

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-15 10:00AM	0	0	0	0	0	6	0	88	0	0	88	1	0	0	0	0	0	5	0	73	0	0	73	2	161
10:15AM	1	0	0	0	1	8	0	89	0	0	89	1	0	0	0	0	0	9	0	44	0	0	44	2	134
10:30AM	0	0	0	0	0	6	0	97	0	0	97	1	0	0	0	0	0	7	0	68	0	0	68	1	165
10:45AM	0	0	0	0	0	8	0	87	0	0	87	0	0	0	0	0	0	2	0	93	1	0	94	1	181
Total	1	0	0	0	1	28	0	361	0	0	361	3	0	0	0	0	0	23	0	278	1	0	279	6	641
% Approach	100%	0%	0%	0%	-	-	0%	100%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	99.6%	0.4%	0%	-	-	-
% Total	0.2%	0%	0%	0%	0.2%	-	0%	56.3%	0%	0%	56.3%	-	0%	0%	0%	0%	0%	-	0%	43.4%	0.2%	0%	43.5%	-	-
PHF	0.250	-	-	-	0.250	-	-	0.928	-	-	0.928	-	-	-	-	-	-	-	-	0.753	0.250	-	0.747	-	0.888
Motorcycles	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Lights	1	0	0	0	1	-	0	356	0	0	356	-	0	0	0	0	0	-	0	275	1	0	276	-	633
% Lights	100%	0%	0%	0%	100%	-	0%	98.6%	0%	0%	98.6%	-	0%	0%	0%	0%	0%	-	0%	98.9%	100%	0%	98.9%	-	98.8%
Single-Unit Trucks	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	0	1	0	0	1	-	4
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	0.8%	0%	0%	0.8%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0.6%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	2
% Buses	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0.3%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	1	0	0	1	-	2
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	0%	-	0%	0.4%	0%	0%	0.4%	-	0.3%
Pedestrians	-	-	-	-	-	23	-	-	-	-	-	3	-	-	-	-	-	20	-	-	-	-	-	5	-
% Pedestrians	-	-	-	-	-	82.1%	-	-	-	-	-	100%	-	-	-	-	-	87.0%	-	-	-	-	-	83.3%	-
Bicycles on Crosswalk	-	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-
% Bicycles on Crosswalk	-	-	-	-	-	17.9%	-	-	-	-	-	0%	-	-	-	-	-	13.0%	-	-	-	-	-	16.7%	-

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

239292 (2) Washington St @ Pathway TMC - TMC

Sat Apr 15, 2023

Midday Peak (WKND) (Apr 15 2023 11AM - 12 PM)

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

All Movements

ID: 1055362, Location: 42.467684, -70.953348

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-15 11:00AM	0	0	0	0	0	7	0	127	0	0	127	1	0	0	0	0	0	7	0	66	0	0	66	2	193
11:15AM	1	0	0	0	1	5	0	169	0	0	169	1	0	0	0	0	0	5	0	66	1	0	67	1	237
11:30AM	0	0	0	0	0	6	0	139	0	0	139	0	0	0	0	0	0	5	0	89	0	0	89	0	228
11:45AM	0	0	0	0	0	7	0	91	0	0	91	1	0	0	0	0	0	10	0	105	0	0	105	2	196
Total	1	0	0	0	1	25	0	526	0	0	526	3	0	0	0	0	0	27	0	326	1	0	327	5	854
% Approach	100%	0%	0%	0%	-	-	0%	100%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	99.7%	0.3%	0%	-	-	-
% Total	0.1%	0%	0%	0%	0.1%	-	0%	61.6%	0%	0%	61.6%	-	0%	0%	0%	0%	0%	-	0%	38.2%	0.1%	0%	38.3%	-	-
PHF	0.250	-	-	-	0.250	-	-	0.778	-	-	0.778	-	-	-	-	-	-	-	-	0.776	0.250	-	0.779	-	0.901
Motorcycles	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	0	1	0	0	1	-	4
% Motorcycles	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	-	-	0%	0.3%	0%	0%	0.3%	-	0.5%
Lights	1	0	0	0	1	-	0	510	0	0	510	-	0	0	0	0	0	-	0	317	1	0	318	-	829
% Lights	100%	0%	0%	0%	100%	-	0%	97.0%	0%	0%	97.0%	-	0%	0%	0%	0%	-	-	0%	97.2%	100%	0%	97.2%	-	97.1%
Single-Unit Trucks	0	0	0	0	0	-	0	9	0	0	9	-	0	0	0	0	0	-	0	6	0	0	6	-	15
% Single-Unit Trucks	0%	0%	0%	0%	0%	-	0%	1.7%	0%	0%	1.7%	-	0%	0%	0%	0%	-	-	0%	1.8%	0%	0%	1.8%	-	1.8%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Buses	0%	0%	0%	0%	0%	-	0%	0.2%	0%	0%	0.2%	-	0%	0%	0%	0%	-	-	0%	0.6%	0%	0%	0.6%	-	0.4%
Bicycles on Road	0	0	0	0	0	-	0	3	0	0	3	-	0	0	0	0	0	-	0	0	0	0	0	-	3
% Bicycles on Road	0%	0%	0%	0%	0%	-	0%	0.6%	0%	0%	0.6%	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	-	0.4%
Pedestrians	-	-	-	-	-	25	-	-	-	-	-	3	-	-	-	-	-	26	-	-	-	-	-	5	-
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	96.3%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	3.7%	-	-	-	-	-	0%	-

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

239292 (2) Washington St @ Pathway TMC - TMC

Sat Apr 15, 2023

PM Peak (WKND) (Apr 15 2023 1PM - 2 PM)

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

All Movements

ID: 1055362, Location: 42.467684, -70.953348

Provided by: Precision Data Industries, LLC (PDI)
157 Washington Street, 2,
Hudson, MA, 01749, US

Leg Direction	Crosswalk Southbound						Washington Street (Route 129) Westbound						Crosswalk Northbound						Washington Street (Route 129) Eastbound						Int
	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	
2023-04-15 1:00PM	0	0	0	0	0	11	0	107	0	0	107	0	0	0	0	0	0	6	0	84	0	0	84	7	191
1:15PM	0	0	0	0	0	6	0	93	0	0	93	0	0	0	0	0	0	4	0	79	0	0	79	2	172
1:30PM	0	0	0	0	0	4	0	100	0	0	100	2	0	0	0	0	0	5	0	97	0	0	97	10	197
1:45PM	0	0	0	0	0	9	0	99	0	0	99	1	0	0	0	0	0	6	0	78	0	1	79	5	178
Total	0	0	0	0	0	30	0	399	0	0	399	3	0	0	0	0	0	21	0	338	0	1	339	24	738
% Approach	0%	0%	0%	0%	-	-	0%	100%	0%	0%	-	-	0%	0%	0%	0%	-	-	0%	99.7%	0%	0.3%	-	-	-
% Total	0%	0%	0%	0%	0%	-	0%	54.1%	0%	0%	54.1%	-	0%	0%	0%	0%	0%	-	0%	45.8%	0%	0.1%	45.9%	-	-
PHF	-	-	-	-	-	-	-	0.930	-	-	0.930	-	-	-	-	-	-	-	-	0.866	-	0.250	0.869	-	0.933
Motorcycles	0	0	0	0	0	-	0	4	0	0	4	-	0	0	0	0	0	-	0	4	0	0	4	-	8
% Motorcycles	0%	0%	0%	0%	-	-	0%	1.0%	0%	0%	1.0%	-	0%	0%	0%	0%	-	-	0%	1.2%	0%	0%	1.2%	-	1.1%
Lights	0	0	0	0	0	-	0	388	0	0	388	-	0	0	0	0	0	-	0	327	0	1	328	-	716
% Lights	0%	0%	0%	0%	-	-	0%	97.2%	0%	0%	97.2%	-	0%	0%	0%	0%	-	-	0%	96.7%	0%	100%	96.8%	-	97.0%
Single-Unit Trucks	0	0	0	0	0	-	0	5	0	0	5	-	0	0	0	0	0	-	0	3	0	0	3	-	8
% Single-Unit Trucks	0%	0%	0%	0%	-	-	0%	1.3%	0%	0%	1.3%	-	0%	0%	0%	0%	-	-	0%	0.9%	0%	0%	0.9%	-	1.1%
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Articulated Trucks	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	-	-	0%	0%	0%	0%	0%	-	0%
Buses	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Buses	0%	0%	0%	0%	-	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	-	-	0%	0.6%	0%	0%	0.6%	-	0.4%
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	1	-	0	0	0	0	0	-	0	2	0	0	2	-	3
% Bicycles on Road	0%	0%	0%	0%	-	-	0%	0.3%	0%	0%	0.3%	-	0%	0%	0%	0%	-	-	0%	0.6%	0%	0%	0.6%	-	0.4%
Pedestrians	-	-	-	-	-	29	-	-	-	-	-	3	-	-	-	-	-	21	-	-	-	-	-	24	
% Pedestrians	-	-	-	-	-	96.7%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	3.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-

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

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

Station #: 230150000128

STA. 1EB

File: D0410016.prn

Site ID: 110000000103

City: Lynn

Location: Rte.129EB,W.of Hanover St/Beacon Hill Av

County: class

Direction: EAST

TIME	MON 10	TUE 11	WED	THU	FRI	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00		84				84			84	84
02:00		45				45			45	45
03:00		40				40			40	40
04:00		34				34			34	34
05:00		40				40			40	40
06:00		124				124			124	124
07:00		289				289			289	289
08:00		563				563			563	563
09:00		575				575			575	575
10:00		425				425			425	425
11:00		432				432			432	432
12:00	403	432				418			418	835
13:00	398	448				423			423	846
14:00	452	429				440			440	881
15:00	468	499				484			484	967
16:00	480	556				518			518	1036
17:00	481	543				512			512	1024
18:00	571	534				552			552	1105
19:00	462	559				510			510	1021
20:00	390	486				438			438	876
21:00	346	341				344			344	687
22:00	297	282				290			290	579
23:00	203	188				196			196	391
24:00	137	163				150			150	300

TOTALS 5088 8111 7926 7926 13199

% AVG WKDY 64.2 102.3
 % AVG WEEK 64.2 102.3

AM Times 12:00 09:00 09:00 09:00
 AM Peaks 403 575 575 575

PM Times 18:00 19:00 18:00 18:00
 PM Peaks 571 559 552 552

U4

ComB EB AWD 7777

WB 6369

ComB AWD 14146

FAC .94

ADT 13,300

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/13/2023

STA. 1 EB

Station #: 230150000128

Site ID: 110000000103

Location: Rte.129EB,W.of Hanover St/Beacon Hill Av

Direction: EAST

File: D0413002.prn

City: Lynn

County: class

TIME	MON	TUE	WED	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00				74	86	80	115	129	101	404
02:00				69	58	64	85	90	76	302
03:00				33	50	42	56	60	50	199
04:00				37	42	40	39	48	42	166
05:00				46	53	50	40	40	45	179
06:00				135	117	126	60	46	90	358
07:00				287	297	292	172	91	212	847
08:00				545	528	536	194	145	353	1412
09:00				512	478	495	321	176	372	1487
10:00				441	404	422	326	281	363	1452
11:00				414	455	434	331	300	375	1500
12:00				435	408	422	385	348	394	1576
13:00				415	509	462	388	381	423	1693
14:00				424	466	445	435	347	418	1672
15:00				176	486	331	410	383	364	1455
16:00				454	497	476	474	393	454	1818
17:00				479	461	470	429	394	441	1763
18:00				498	530	514	455	368	463	1851
19:00				472	473	472	398	418	440	1761
20:00				417	443	430	363	421	411	1644
21:00				361	336	348	364	266	332	1327
22:00				328	318	323	337	250	308	1233
23:00				256	240	248	277	200	243	973
24:00				159	204	182	208	143	178	714
TOTALS				7467	7939	7704	6662	5718	6948	27786
% AVG WKDY				96.9	103.1		86.5	74.2		
% AVG WEEK				107.5	114.3		95.9	82.3		
AM Times				08:00	08:00	08:00	12:00	12:00	12:00	
AM Peaks				545	528	536	385	348	394	
PM Times				18:00	18:00	18:00	16:00	20:00	18:00	
PM Peaks				498	530	514	474	421	463	

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

STA. 1 WB

Station #: 230150000063

File: D0410015.prn

Site ID: 110000000104

City: Lynn

Location: Rte.129WB,W.of Hanover St/Beacon Hill Av

County: speed

Direction: WEST

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		54	58	59	71	60	96	97	72	435
02:00		54	65	62	67	62	68	97	69	413
03:00		23	26	17	41	27	53	56	36	216
04:00		36	30	37	42	36	36	51	39	232
05:00		72	69	69	73	71	31	37	58	351
06:00		175	165	178	144	166	82	60	134	804
07:00		331	320	340	328	330	196	82	266	1597
08:00		382	355	350	357	361	199	114	293	1757
09:00		323	318	330	312	321	239	161	280	1683
10:00		312	299	295	306	303	331	277	303	1820
11:00		339	290	345	345	330	320	279	320	1918
12:00	348	353	297	360	323	336	400	301	340	2382
13:00	314	383	351	387	400	367	327	380	363	2542
14:00	395	419	358	404	430	401	356	350	387	2712
15:00	423	482	448	112	473	388	357	357	379	2652
16:00	426	481	412	409	458	437	333	311	404	2830
17:00	434	425	430	435	408	426	340	310	397	2782
18:00	405	402	413	410	448	416	334	299	387	2711
19:00	342	364	361	401	364	366	303	346	354	2481
20:00	318	325	311	363	350	333	286	307	323	2260
21:00	222	273	314	297	344	290	308	243	286	2001
22:00	240	226	243	242	274	245	296	224	249	1745
23:00	152	157	162	206	217	179	268	194	194	1356
24:00	95	111	110	127	145	118	140	126	122	854
TOTALS	4114	6502	6205	6235	6720	6369	5699	5059	6055	40534
% AVG WKDY	64.6	102.1	97.4	97.9	105.5		89.5	79.4		
% AVG WEEK	67.9	107.4	102.5	103.0	111.0		94.1	83.6		
AM Times	12:00	08:00	08:00	12:00	08:00	08:00	12:00	12:00	12:00	
AM Peaks	348	382	355	360	357	361	400	301	340	
PM Times	17:00	15:00	15:00	17:00	15:00	16:00	15:00	13:00	16:00	
PM Peaks	434	482	448	435	473	437	357	380	404	

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1
Starting: 4/10/2023

Page: 1

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST

STA. 1 WB

File: D0410014.prn
City: Lynn
County: class

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		54	58	59	71	60	96	97	72	435
02:00		54	65	62	67	62	68	97	69	413
03:00		23	26	17	41	27	53	56	36	216
04:00		36	30	37	42	36	36	51	39	232
05:00		72	69	69	73	71	31	37	58	351
06:00		175	165	178	144	166	82	60	134	804
07:00		331	320	340	328	330	196	82	266	1597
08:00		382	355	350	357	361	199	114	293	1757
09:00		323	318	330	312	321	239	161	280	1683
10:00		312	299	295	306	303	331	277	303	1820
11:00		339	290	345	345	330	320	279	320	1918
12:00	348	353	297	360	323	336	400	301	340	2382
13:00	314	383	351	387	400	367	327	380	363	2542
14:00	395	419	358	404	430	401	356	350	387	2712
15:00	423	482	448	112	473	388	357	357	379	2652
16:00	426	481	412	409	458	437	333	311	404	2830
17:00	434	425	430	435	408	426	340	310	397	2782
18:00	405	402	413	410	448	416	334	299	387	2711
19:00	342	364	361	401	364	366	303	346	354	2481
20:00	318	325	311	363	350	333	286	307	323	2260
21:00	222	273	314	297	344	290	308	243	286	2001
22:00	240	226	243	242	274	245	296	224	249	1745
23:00	152	157	162	206	217	179	268	194	194	1356
24:00	95	111	110	127	145	118	140	126	122	854
TOTALS	4114	6502	6205	6235	6720	6369	5699	5059	6055	40534
% AVG WKDY	64.6	102.1	97.4	97.9	105.5		89.5	79.4		
% AVG WEEK	67.9	107.4	102.5	103.0	111.0		94.1	83.6		
AM Times	12:00	08:00	08:00	12:00	08:00	08:00	12:00	12:00	12:00	
AM Peaks	348	382	355	360	357	361	400	301	340	
PM Times	17:00	15:00	15:00	17:00	15:00	16:00	15:00	13:00	16:00	
PM Peaks	434	482	448	435	473	437	357	380	404	

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/11/2023

STA. 2 NB

Station #: 230150000108

Site ID: 000000000201

Location: Beacon Hill Ave. 1-way NB, N.of Rte.129

Direction: NORTH

File: sta.2comb.prn

City: Lynn

County:

TIME	MON	TUE	WED	THU	FRI	WKDAY	SAT	SUN	WEEK	TOTAL
		11	12	13	14	AVG			AVG	
01:00		30	32	32	35	32			32	129
02:00		10	22	24	25	20			20	81
03:00		14	10	10	16	12			12	50
04:00		9	5	4	17	9			9	35
05:00		6	19	18	15	14			14	58
06:00		38	40	51	0	32			32	129
07:00		143	140	124	0	102			102	407
08:00		227	226	200	0	163			163	653
09:00		221	218	211	0	162			162	650
10:00		117	128	136	0	95			95	381
11:00		137	121	117	0	94			94	375
12:00		132	129	154	142	139			139	557
13:00		186	194	164	182	182			182	726
14:00		212	219	217	177	206			206	825
15:00		300	292	568	302	366			366	1462
16:00		352	346	316	303	329			329	1317
17:00		356	393	395	377	380			380	1521
18:00		345	361	326	380	353			353	1412
19:00		297	292	252	305	286			286	1146
20:00		257	266	249	278	262			262	1050
21:00		208	238	210	190	212			212	846
22:00		163	166	186	169	171			171	684
23:00		103	117	131	110	115			115	461
24:00		63	71	81	65	70			70	280
TOTALS		3926	4045	4176	3088	3806			3806	15235
% AVG WKDY		103.2	106.3	109.7	81.1					
% AVG WEEK		103.2	106.3	109.7	81.1					
AM Times		08:00	08:00	09:00	12:00	08:00			08:00	
AM Peaks		227	226	211	142	163			163	
PM Times		17:00	17:00	15:00	18:00	17:00			17:00	
PM Peaks		356	393	568	380	380			380	

U7

AWP 4049

FAC .94(.99)

ADT 3,800

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

STA. 3 EB

Station #: 230150000162

Site ID: 000000000303

Location: Rte.129EB,E.of Hanover St/Beacon Hill Av

Direction: EAST

File: D0410004.prn

City: Lynn

County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00		124	81	72		92			92	277
02:00		83	36	48		56			56	167
03:00		63	33	18		38			38	114
04:00		58	29	46		44			44	133
05:00		93	35	36		55			55	164
06:00		255	102	108		155			155	465
07:00		560	221	217		333			333	998
08:00		767	514	490		590			590	1771
09:00		747	479	476		567			567	1702
10:00		416	371	413		400			400	1200
11:00		458	343	421		407			407	1222
12:00	340	421	364	425		388			388	1550
13:00	459	399	374	385		404			404	1617
14:00	755	379	453	385		493			493	1972
15:00	875	453	511	411		562			562	2250
16:00	818	479	423	462		546			546	2182
17:00	839	449	444	505		559			559	2237
18:00	867	431	429	402		532			532	2129
19:00	646	466	371	448		483			483	1931
20:00	670	417	378	367		458			458	1832
21:00	509	285	306			367			367	1100
22:00	445	210	247			301			301	902
23:00	318	180	183			227			227	681
24:00	213	128	118			153			153	459
TOTALS	7754	8321	6845	6135		8210			8210	29055
% AVG WKDY	94.4	101.4	83.4	74.7						
% AVG WEEK	94.4	101.4	83.4	74.7						
AM Times	12:00	08:00	08:00	08:00		08:00			08:00	
AM Peaks	340	767	514	490		590			590	
PM Times	15:00	16:00	15:00	17:00		15:00			15:00	
PM Peaks	875	479	511	505		562			562	

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EB 8210

WB 8517

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

Station #: 230150000086

Site ID: 000000000304

Location: Rte.129WB,E.of Hanover St/Beacon Hill Av

Direction: WEST

STA 3 WB

File: D0410003.prn

City: Lynn

County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		117	66	74	77	84	118	120	95	572
02:00		79	64	72	78	73	91	125	85	509
03:00		57	35	20	42	38	59	63	46	276
04:00		53	30	43	46	43	37	57	44	266
05:00		91	77	63	72	76	35	39	63	377
06:00		239	174	182	158	188	94	62	152	909
07:00		495	386	379	385	411	219	82	324	1946
08:00		556	500	503	464	506	210	131	394	2364
09:00		468	422	479	445	454	293	192	383	2299
10:00		361	336	347	362	352	369	315	348	2090
11:00		399	323	390	427	385	371	318	371	2228
12:00	369	399	365	438	390	392	586	347	413	2894
13:00	350	424	409	460	486	426	389	445	423	2963
14:00	671	479	496	472	535	531	416	444	502	3513
15:00	803	613	575	719	654	673	441	434	606	4239
16:00	732	643	606	610	622	643	388	406	572	4007
17:00	774	574	580	615	608	630	416	373	563	3940
18:00	785	516	548	550	614	603	418	359	541	3790
19:00	478	460	469	504	469	476	355	391	447	3126
20:00	493	397	400	440	450	436	359	372	416	2911
21:00	475	327	396	396	453	409	364	281	385	2692
22:00	416	261	290	277	327	314	391	258	317	2220
23:00	285	195	173	223	257	227	288	219	234	1640
24:00	176	115	118	156	171	147	163	130	147	1029
TOTALS	6807	8318	7838	8412	8592	8517	6870	5963	7871	52800
% AVG WKDY	79.9	97.7	92.0	98.8	100.9		80.7	70.0		
% AVG WEEK	86.5	105.7	99.6	106.9	109.2		87.3	75.8		
AM Times	12:00	08:00	08:00	08:00	08:00	08:00	12:00	12:00	12:00	
AM Peaks	369	556	500	503	464	506	586	347	413	
PM Times	15:00	16:00	16:00	15:00	15:00	15:00	15:00	13:00	15:00	
PM Peaks	803	643	606	719	654	673	441	445	606	

44

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1
Starting: 4/10/2023

Page: 1

Station #: 230150000106
Site ID: 000000040102
Location: Hanover St., south of Route 129
Direction: NORTH

STA. 4 NB

File: D0410013.prn
City: Lynn
County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		14	13	13	9	12	27	38	19	114
02:00		2	8	6	15	8	19	17	11	67
03:00		3	2	6	14	6	11	15	8	51
04:00		4	6	6	7	6	7	7	6	37
05:00		9	8	14	8	10	5	1	8	45
06:00		28	34	29	32	31	16	9	25	148
07:00		66	67	70	68	68	42	22	56	335
08:00		115	106	119	138	120	36	27	90	541
09:00		134	137	155	152	144	54	35	111	667
10:00		89	94	77	93	88	77	51	80	481
11:00	72	72	91	96	85	83	76	63	79	555
12:00	95	102	77	101	105	96	133	102	102	715
13:00	118	122	144	113	129	125	118	94	120	838
14:00	108	124	137	137	130	127	125	117	125	878
15:00	225	201	204	315	258	241	131	105	206	1439
16:00	214	209	209	228	222	216	117	114	188	1313
17:00	283	219	258	304	200	253	122	96	212	1482
18:00	174	180	224	185	168	186	104	108	163	1143
19:00	146	163	174	125	172	156	108	92	140	980
20:00	151	150	144	138	125	142	127	97	133	932
21:00	78	107	115	90	113	101	89	101	99	693
22:00	76	86	78	91	93	85	94	55	82	573
23:00	50	47	55	68	77	59	81	72	64	450
24:00	32	34	24	35	58	37	51	42	39	276
TOTALS	1822	2280	2409	2521	2471	2400	1770	1480	2166	14753
% AVG WKDY	75.9	95.0	100.4	105.0	103.0		73.8	61.7		
% AVG WEEK	84.1	105.3	111.2	116.4	114.1		81.7	68.3		
AM Times	12:00	09:00	09:00	09:00	09:00	09:00	12:00	12:00	09:00	
AM Peaks	95	134	137	155	152	144	133	102	111	
PM Times	17:00	17:00	17:00	15:00	15:00	17:00	15:00	14:00	17:00	
PM Peaks	283	219	258	315	258	253	131	117	212	

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NB 2400

SB 2323

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 2

Page: 2

Starting: 4/10/2023

Station #: 230150000106
 Site ID: 000000040102
 Location: Hanover St., south of Route 129
 Direction: SOUTH

STA. 45B

File: D0410013.prn
 City: Lynn
 County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		14	10	17	13	14	19	27	17	100
02:00		6	12	11	13	10	21	38	17	101
03:00		8	7	12	8	9	13	12	10	60
04:00		8	5	11	11	9	10	13	10	58
05:00		11	14	8	9	10	5	7	9	54
06:00		25	35	28	22	28	18	18	24	146
07:00		94	102	102	92	98	40	12	74	442
08:00		183	182	194	194	188	56	25	139	834
09:00		163	194	180	179	179	104	41	144	861
10:00		98	67	86	101	88	75	66	82	493
11:00	66	88	78	95	87	83	81	65	80	560
12:00	75	91	74	110	105	91	174	84	102	713
13:00	73	101	91	101	119	97	104	91	97	680
14:00	113	111	116	116	141	119	114	108	117	819
15:00	173	166	152	295	254	208	97	106	178	1243
16:00	165	217	173	233	224	202	91	110	173	1213
17:00	183	222	185	292	184	213	115	113	185	1294
18:00	146	170	172	170	180	168	100	85	146	1023
19:00	134	145	159	145	145	146	135	77	134	940
20:00	92	106	121	108	118	109	88	98	104	731
21:00	70	75	110	103	115	95	72	75	89	620
22:00	68	62	67	85	71	71	77	54	69	484
23:00	42	57	30	52	59	48	81	55	54	376
24:00	30	39	36	38	57	40	43	25	38	268
TOTALS	1430	2260	2192	2592	2501	2323	1733	1405	2092	14113
% AVG WKDY	61.6	97.3	94.4	111.6	107.7		74.6	60.5		
% AVG WEEK	68.4	108.0	104.8	123.9	119.6		82.8	67.2		
AM Times	12:00	08:00	09:00	08:00	08:00	08:00	12:00	12:00	09:00	
AM Peaks	75	183	194	194	194	188	174	84	144	
PM Times	17:00	17:00	17:00	15:00	15:00	17:00	19:00	17:00	17:00	
PM Peaks	183	222	185	295	254	213	135	113	185	

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1
Starting: 4/10/2023

Page: 1

Station #: 230150000102
Site ID: 000000000503
Location: Buffum St. EB, W. of Union St.
Direction: EAST

STA. 5 EB

File: D0410005.prn
City: Lynn
County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00		46	26	37	56	41			41	165
02:00		36	19	12	13	20			20	80
03:00		10	9	12	23	14			14	54
04:00		14	8	0	15	9			9	37
05:00		27	17	0		15			15	44
06:00		74	58	0		44			44	132
07:00		158	112	0		90			90	270
08:00		178	331	0		170			170	509
09:00		195	476	0		224			224	671
10:00		220	470	0		230			230	690
11:00		207	425	267		300			300	899
12:00		205	428	316		316			316	949
13:00	208	277	442	389		329			329	1316
14:00	287	230	408	384		327			327	1309
15:00	357	259	488	367		368			368	1471
16:00	338	415	421	483		414			414	1657
17:00	478	442	414	454		447			447	1788
18:00	437	455	401	457		438			438	1750
19:00	285	323	328	365		325			325	1301
20:00	297	283	296	380		314			314	1256
21:00	192	200	187	229		202			202	808
22:00	121	149	160	246		169			169	676
23:00	108	97	127	139		118			118	471
24:00	73	73	72	69		72			72	287
TOTALS	3181	4573	6123	4606	107	4996			4996	18590
% AVG WKDY	63.7	91.5	122.6	92.2	2.1					
% AVG WEEK	63.7	91.5	122.6	92.2	2.1					
AM Times		10:00	09:00	12:00	01:00	12:00			12:00	
AM Peaks		220	476	316	56	316			316	
PM Times	17:00	18:00	15:00	16:00		17:00			17:00	
PM Peaks	478	455	488	483		447			447	

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EB 5348

WB 3165

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1
Starting: 4/10/2023

Page: 1

Station #: 230150000087
Site ID: 000000000504
Location: Buffum St. WB, W. of Union St.
Direction: WEST

STA. 5 WB

File: D0410006.prn
City: Lynn
County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		21	33	15	39	27	16	31	26	155
02:00		3	7	8	7	6	28	21	12	74
03:00		7	5	2	22	9	9	2	8	47
04:00		7	4	3	11	6	10	8	7	43
05:00		22	18	5	23	17	10	10	15	88
06:00		13	25	14	28	20	13	6	16	99
07:00		80	88	77	92	84	47	15	66	399
08:00		162	175	139	188	166	83	53	133	800
09:00		227	236	272	235	242	155	68	199	1193
10:00		207	209	121	132	167	175	174	170	1018
11:00		262	235	219	129	211	165	164	196	1174
12:00		142	216	180	148	172	201	164	175	1051
13:00	269	262	182	184	146	209	249	277	224	1569
14:00	269	271	124	191	89	189	229	194	195	1367
15:00	284	282	229	182	53	206	182	137	193	1349
16:00	326	331	232	180	16	217	188	201	211	1474
17:00	210	233	203	283	17	189	168	131	178	1245
18:00	179	232	198	227	10	169	153	106	158	1105
19:00	195	202	187	242	15	168	207	138	169	1186
20:00	121	144	130	162	143	140	162	138	143	1000
21:00	76	110	109	139	150	117	113	83	111	780
22:00	78	89	93	100	100	92	108	91	94	659
23:00	51	65	45	93	51	61	61	61	61	427
24:00	26	28	26	46	42	34	49	55	39	272
TOTALS	2084	3402	3009	3084	1886	2918	2781	2328	2799	18574
% AVG WKDY	71.4	116.6	103.1	105.7	64.6		95.3	79.8		
% AVG WEEK	74.5	121.5	107.5	110.2	67.4		99.4	83.2		
AM Times		11:00	09:00	09:00	09:00	09:00	12:00	10:00	09:00	
AM Peaks		262	236	272	235	242	201	174	199	
PM Times	16:00	16:00	16:00	17:00	21:00	16:00	13:00	13:00	13:00	
PM Peaks	326	331	232	283	150	217	249	277	224	

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1
Starting: 4/10/2023

Page: 1

Station #: 230150000077
Site ID: 000000000604
Location: Baldwin St. 1-way WB, W. of Union St.
Direction: WEST

STA. 6 WB

File: D0410007.prn
City: Lynn
County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN	WEEK AVG	TOTAL
01:00		10	18	21	19	17	13		16	81
02:00		5	8	4	16	8	26		12	59
03:00		3	7	4	13	7	9		7	36
04:00		9	2	10	8	7	6		7	35
05:00		7	6	0	15	7	13		8	41
06:00		9	21	0	21	13			13	51
07:00		54	49	0	47	38			38	150
08:00		73	76	0	72	55			55	221
09:00		83	75	0	69	57			57	227
10:00		65	67	0	72	51			51	204
11:00		62	83	71	70	72			72	286
12:00		80	56	81	96	78			78	313
13:00	92	79	95	112	124	100			100	502
14:00	104	94	95	121	95	102			102	509
15:00	97	89	84	102	104	95			95	476
16:00	128	111	113	138	122	122			122	612
17:00	134	132	114	117	142	128			128	639
18:00	148	133	121	135	145	136			136	682
19:00	115	108	101	113	123	112			112	560
20:00	90	75	84	109	104	92			92	462
21:00	105	86	119	76	85	94			94	471
22:00	52	65	55	71	56	60			60	299
23:00	38	33	49	49	41	42			42	210
24:00	28	30	36	39	44	35			35	177
TOTALS	1131	1495	1534	1373	1703	1528	67		1532	7303
% AVG WKDY	74.0	97.8	100.4	89.9	111.5		4.4			
% AVG WEEK	73.8	97.6	100.1	89.6	111.2		4.4			
AM Times		09:00	11:00	12:00	12:00	12:00	02:00		12:00	
AM Peaks		83	83	81	96	78	26		78	
PM Times	18:00	18:00	18:00	16:00	18:00	18:00			18:00	
PM Peaks	148	133	121	138	145	136			136	

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

Station #: 230150000125
 Site ID: 000000000701
 Location: Union St. NB, north of Silsbee St.
 Direction: NORTH

STA. 7 NB

File: D0410008.prn
 City: Lynn
 County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		117	111	104	151	121	120	209	135	812
02:00		66	61	58	92	69	47	119	74	443
03:00		29	33	52	60	44	50	79	50	303
04:00		38	36	40	53	42	71	45	47	283
05:00		55	53	45	44	49	64	49	52	310
06:00		94	87	95	100	94	70	59	84	505
07:00		199	176	176	189	185	122	107	162	969
08:00		374	367	375	355	368	193	186	308	1850
09:00		334	357	354	391	359	310	210	326	1956
10:00		361	390	359	411	380	395	350	378	2266
11:00		356	431	361	432	395	420	314	386	2314
12:00		388	431	447	429	424	497	456	441	2648
13:00	393	481	455	515	529	475	638	534	506	3545
14:00	511	507	460	540	542	512	562	576	528	3698
15:00	615	576	657	587	638	615	500	463	577	4036
16:00	669	726	664	656	623	668	552	531	632	4421
17:00	770	684	725	727	739	729	615	520	683	4780
18:00	711	789	777	784	813	775	669	504	721	5047
19:00	639	650	682	643	773	677	612	525	646	4524
20:00	578	563	535	598	672	589	581	481	573	4008
21:00	472	572	493	523	547	521	509	405	503	3521
22:00	334	371	381	435	446	393	436	323	389	2726
23:00	265	218	255	305	350	279	289	244	275	1926
24:00	160	216	171	199	252	200	205	162	195	1365
TOTALS	6117	8764	8788	8978	9631	8963	8527	7451	8671	58256
% AVG WKDY	68.2	97.8	98.0	100.2	107.5		95.1	83.1		
% AVG WEEK	70.5	101.1	101.3	103.5	111.1		98.3	85.9		
AM Times		12:00	11:00	12:00	11:00	12:00	12:00	12:00	12:00	
AM Peaks		388	431	447	432	424	497	456	441	
PM Times	17:00	18:00	18:00	18:00	18:00	18:00	18:00	14:00	18:00	
PM Peaks	770	789	777	784	813	775	669	576	721	

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 NB 8963
 SB 9457
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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

Station #: 230150000025
 Site ID: 000000000702
 Location: Union St. SB, north of Silsbee St.
 Direction: SOUTH

STA 7SB

File: D0410009.prn
 City: Lynn
 County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		67	116	87	215	121	110	130	121	725
02:00		55	63	60	105	71	66	110	76	459
03:00		42	48	35	56	45	48	74	50	303
04:00		44	22	0	68	34	63	59	43	256
05:00		108	91	0	106	76	89	59	76	453
06:00		197	265	0	311	193	164	87	171	1024
07:00		436	437	0	458	333	279	117	288	1727
08:00		661	726	0	684	518	296	193	427	2560
09:00		677	684	0	666	507	385	268	447	2680
10:00		556	585	0	640	445	490	490	460	2761
11:00		554	489	245	618	476	525	459	482	2890
12:00		526	512	531	640	552	494	435	523	3138
13:00	629	555	561	561	596	580	555	571	575	4028
14:00	675	657	639	655	607	647	546	500	611	4279
15:00	633	582	560	606	611	598	525	475	570	3992
16:00	615	635	597	593	598	608	485	508	576	4031
17:00	679	594	585	637	589	617	524	436	578	4044
18:00	657	636	534	667	670	633	572	450	598	4186
19:00	608	627	568	613	648	613	599	459	589	4122
20:00	528	485	477	573	563	525	548	450	518	3624
21:00	426	443	445	509	459	456	422	355	437	3059
22:00	318	359	341	398	383	360	418	366	369	2583
23:00	240	265	218	329	311	273	350	272	284	1985
24:00	127	194	134	195	229	176	224	214	188	1317
TOTALS	6135	9955	9697	7294	10831	9457	8777	7537	9057	60226
% AVG WKDY	64.9	105.3	102.5	77.1	114.5		92.8	79.7		
% AVG WEEK	67.7	109.9	107.1	80.5	119.6		96.9	83.2		
AM Times		09:00	08:00	12:00	08:00	12:00	11:00	10:00	12:00	
AM Peaks		677	726	531	684	552	525	490	523	
PM Times	17:00	14:00	14:00	18:00	18:00	14:00	19:00	13:00	14:00	
PM Peaks	679	657	639	667	670	647	599	571	611	

Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

STA 8 EB

Station #: 230150000044

Site ID: 000000000803

Location: Silsbee St. 1-way EB, east of Union St.

Direction: EAST

File: D0410010.prn

City: Lynn

County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT	SUN	WEEK AVG	TOTAL
01:00		31	27	29	78	41			41	165
02:00		31	26	23	36	29			29	116
03:00		16	16	19	26	19			19	77
04:00		15	6	0	18	10			10	39
05:00		33	32	0	36	25			25	101
06:00		69	90	0	92	63			63	251
07:00		147	144	0	142	108			108	433
08:00		242	313	0	284	210			210	839
09:00		320	415	0	340	269			269	1075
10:00		274	334	2	292	226			226	902
11:00		213	362	158	249	246			246	982
12:00		196	331	263	278	267			267	1068
13:00	273	233	272	313	259	270			270	1350
14:00	318	263	325	361	322	318			318	1589
15:00	347	242	349	329	303	314			314	1570
16:00	341	300	369	386	351	349			349	1747
17:00	409	289	397	372	348	363			363	1815
18:00	335	357	315	333	377	343			343	1717
19:00	264	242	258	310		268			268	1074
20:00	197	204	206	283		222			222	890
21:00	179	154	189	238		190			190	760
22:00	102	137	119	180		134			134	538
23:00	103	97	93	113		102			102	406
24:00	59	63	46	92		65			65	260
TOTALS	2927	4168	5034	3804	3831	4451			4451	19764
% AVG WKDY	65.8	93.6	113.1	85.5	86.1					
% AVG WEEK	65.8	93.6	113.1	85.5	86.1					
AM Times		09:00	09:00	12:00	09:00	09:00			09:00	
AM Peaks		320	415	263	340	269			269	
PM Times	17:00	18:00	17:00	16:00	18:00	17:00			17:00	
PM Peaks	409	357	397	386	377	363			363	

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4451

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

Station #: 230150000078
 Site ID: 000000000901
 Location: Union St. NB, south of Buffum St.
 Direction: NORTH

STA. 9 NB

File: D0410011.prn
 City: Lynn
 County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		115	104	118	153	122	110	221	137	821
02:00		63	61	64	99	72	101	129	86	517
03:00		25	27	46	80	44	53	84	52	315
04:00		36	29	37	42	36	51	43	40	238
05:00		50	51	39	41	45	60	51	49	292
06:00		67	68	74	81	72	66	46	67	402
07:00		179	168	139	135	155	106	88	136	815
08:00		430	429	440	417	429	155	164	339	2035
09:00		445	360	395	402	400	233	197	339	2032
10:00		405	301	374	432	378	338	263	352	2113
11:00		326	325	364	405	355	390	326	356	2136
12:00		378	344	392	413	382	363	381	378	2271
13:00	546	446	351	366	471	436	730	482	485	3392
14:00	474	455	397	478	494	460	427	548	468	3273
15:00	517	549	502	591	497	531	423	460	506	3539
16:00	521	568	679	530	503	560	543	516	551	3860
17:00	581	604	638	563	563	590	633	509	584	4091
18:00	426	545	613	570	700	571	628	484	567	3966
19:00	533	459	542	473	687	539	576	455	532	3725
20:00	483	465	459	580	542	506	506	449	498	3484
21:00	405	522	453	473	460	463	397	365	439	3075
22:00	336	390	359	372	417	375	441	258	368	2573
23:00	273	236	246	294	332	276	281	217	268	1879
24:00	165	214	187	222	243	206	187	145	195	1363
TOTALS	5260	7972	7693	7994	8609	8003	7798	6881	7792	52207
% AVG WKDY	65.7	99.6	96.1	99.9	107.6		97.4	86.0		
% AVG WEEK	67.5	102.3	98.7	102.6	110.5		100.1	88.3		
AM Times		09:00	08:00	08:00	10:00	08:00	11:00	12:00	12:00	
AM Peaks		445	429	440	432	429	390	381	378	
PM Times	17:00	17:00	16:00	15:00	18:00	17:00	13:00	14:00	17:00	
PM Peaks	581	604	679	591	700	590	730	548	584	

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NB 8003

SB 6143

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Mass Highway Department

WEEKLY SUMMARY FOR LANE 1

Page: 1

Starting: 4/10/2023

Station #: 230150000034
 Site ID: 000000000902
 Location: Union St. SB, south of Buffum St.
 Direction: SOUTH

STA. 9SB

File: D0410012.prn
 City: Lynn
 County:

TIME	MON 10	TUE 11	WED 12	THU 13	FRI 14	WKDAY AVG	SAT 15	SUN 16	WEEK AVG	TOTAL
01:00		31	49	52	71	51	48	78	55	329
02:00		36	23	32	29	30	58	60	40	238
03:00		11	18	13	21	16	34	29	21	126
04:00		22	17	0	24	16	21	19	17	103
05:00		42	29	0	45	29	29	15	27	160
06:00		90	88	0	104	70	57	36	62	375
07:00		140	158	0	145	111	115	46	101	604
08:00		257	476	0	286	255	129	88	206	1236
09:00		365	770	0	411	386	215	117	313	1878
10:00		406	824	13	422	416	322	247	372	2234
11:00		430	639	399	497	491	330	264	426	2559
12:00		443	672	473	382	492	273	224	411	2467
13:00	393	406	666	440	373	456	308	289	411	2875
14:00	446	422	677	480	415	488	344	221	429	3005
15:00	454	357	680	489	455	487	336	204	425	2975
16:00	449	449	525	406	563	478	273	197	409	2862
17:00	449	368	367	405	420	402	256	237	357	2502
18:00	366	361	315	381	405	366	248	231	330	2307
19:00	312	311	324	351	387	337	260	208	308	2153
20:00	267	209	236	265	307	257	225	169	240	1678
21:00	183	169	183	203	191	186	194	160	183	1283
22:00	138	120	139	173	178	150	157	123	147	1028
23:00	96	110	101	113	140	112	137	107	115	804
24:00	49	62	54	57	82	61	91	87	69	482
TOTALS	3602	5617	8030	4745	6353	6143	4460	3456	5474	36263
% AVG WKDY	58.6	91.4	130.7	77.2	103.4		72.6	56.3		
% AVG WEEK	65.8	102.6	146.7	86.7	116.1		81.5	63.1		
AM Times		12:00	10:00	12:00	11:00	12:00	11:00	11:00	11:00	
AM Peaks		443	824	473	497	492	330	264	426	
PM Times	15:00	16:00	15:00	15:00	16:00	14:00	14:00	13:00	14:00	
PM Peaks	454	449	680	489	563	488	344	289	429	

Mass Highway Department

SPEED SUMMARY
 Mon 4/10/2023

Page: 1

STA. 1 EB

Station #: 230150000128
 Site ID: 110000000103
 Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
 Direction: EAST
 Lane: 1

File: D0410017.prn
 City: Lynn
 County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
12:00	12	35	62	88	116	37	5	2	16	8	10	8	2	2	403
13:00	9	31	44	114	137	25	7	0	4	14	4	4	2	3	398
14:00	12	46	54	150	128	21	6	4	11	10	6	0	1	3	452
15:00	19	82	97	132	81	11	5	8	19	9	4	1	0	0	468
16:00	21	74	81	159	100	12	1	2	10	10	3	2	2	3	480
17:00	31	67	108	128	52	8	5	10	35	22	4	3	2	6	481
18:00	37	82	120	180	80	15	3	4	21	14	2	4	2	7	571
19:00	31	60	92	148	71	6	1	1	15	12	6	6	5	8	462
20:00	10	41	95	150	55	3	3	3	7	4	9	8	0	2	390
21:00	8	27	52	132	77	9	6	0	7	9	2	9	2	6	346
22:00	11	23	26	102	78	16	5	0	4	4	7	11	7	3	297
23:00	1	18	23	44	64	22	3	0	0	2	0	4	6	16	203
24:00	6	13	15	29	41	13	6	2	1	2	0	4	2	3	137
DAY TOTAL	208	599	869	1556	1080	198	56	36	150	120	57	64	33	62	5088
PERCENTS	4.1%	11.8%	17.1%	30.6%	21.2%	3.9%	1.1%	0.7%	2.9%	2.4%	1.1%	1.3%	0.6%	1.2%	100.0%

Statistical Information...

15th Percentile Speed
 15.7 mph

85th Percentile Speed
 30.0 mph

Median Speed
 23.0 mph

Average Speed
 25.0 mph

10 MPH Pace Speed
 20 mph to 30 mph
 2636 vehicles in pace
 Representing 54.7% of the total vehicles

Vehicles > 65 MPH
 33
 0.7%

Mass Highway Department

SPEED SUMMARY
Tue 4/11/2023

Page: 2

Station #: 230150000128
Site ID: 110000000103
Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
Direction: EAST
Lane: 1

File: D0410017.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	3	6	3	11	23	13	2	2	1	2	2	2	4	10	84
02:00	0	1	2	5	18	12	4	1	0	0	0	0	2	0	45
03:00	0	6	2	3	6	11	4	0	0	0	2	0	2	4	40
04:00	3	5	2	3	7	10	2	0	0	0	0	0	0	2	34
05:00	1	4	2	6	15	6	2	1	0	0	0	0	2	1	40
06:00	5	16	12	26	33	21	3	1	0	0	0	0	5	2	124
07:00	13	39	29	84	76	18	4	2	3	5	2	3	4	7	289
08:00	35	86	118	157	107	13	2	6	11	4	2	14	2	6	563
09:00	31	80	86	189	112	7	3	6	10	11	13	15	0	12	575
10:00	13	37	27	155	119	20	3	1	21	16	5	4	2	2	425
11:00	8	32	54	133	130	17	3	7	10	11	16	7	2	2	432
12:00	10	45	67	172	94	17	3	4	5	8	3	2	0	2	432
13:00	11	58	65	155	107	17	2	0	8	5	3	9	4	4	448
14:00	28	42	53	125	126	16	1	3	12	9	10	2	0	2	429
15:00	25	59	139	138	77	13	5	4	22	7	8	0	2	0	499
16:00	37	93	138	178	51	8	6	12	10	9	8	3	0	3	556
17:00	20	71	131	171	79	16	7	9	13	11	7	4	4	0	543
18:00	30	76	90	187	84	16	1	3	13	11	3	7	5	8	534
19:00	24	85	135	191	70	6	3	0	6	11	11	8	8	1	559
20:00	20	60	119	151	83	12	3	0	6	10	3	9	2	8	486
21:00	11	22	55	120	92	10	1	0	5	4	8	11	2	0	341
22:00	7	21	44	81	77	13	3	5	6	11	3	4	2	5	282
23:00	3	14	11	52	78	16	5	1	0	0	2	0	2	4	188
24:00	3	5	13	42	61	12	11	0	0	0	0	4	4	8	163
DAY TOTAL	341	963	1397	2535	1725	320	83	68	162	145	111	108	60	93	8111
PERCENTS	4.2%	11.9%	17.2%	31.3%	21.3%	3.9%	1.0%	0.8%	2.0%	1.8%	1.4%	1.3%	0.7%	1.1%	100.0%

Statistical Information...

15th Percentile Speed
15.7 mph

85th Percentile Speed
29.7 mph

Median Speed
22.9 mph

Average Speed
24.7 mph

10 MPH Pace Speed
20 mph to 30 mph
4260 vehicles in pace
Representing 55.5% of the total vehicles

Vehicles > 65 MPH
60
0.8%

Mass Highway Department

SPEED SUMMARY
Thu 4/13/2023

Page: 1

STA. 1EB

Station #: 230150000128
Site ID: 110000000103
Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
Direction: EAST
Lane: 1

File: D0413003.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	0	4	2	5	29	21	4	3	0	0	0	0	0	6	74
02:00	4	1	0	6	19	23	3	1	0	0	0	4	4	4	69
03:00	0	2	1	6	10	7	1	0	0	2	0	0	0	4	33
04:00	0	1	2	5	11	15	2	1	0	0	0	0	0	0	37
05:00	3	7	3	12	9	5	2	0	1	0	0	0	2	2	46
06:00	1	17	9	30	43	24	5	0	0	0	0	0	0	6	135
07:00	7	48	20	82	87	17	2	0	2	2	4	6	0	10	287
08:00	31	75	102	168	109	16	3	4	4	2	6	10	6	9	545
09:00	18	47	103	171	111	13	3	1	9	9	4	6	4	13	512
10:00	7	58	50	126	136	29	4	2	0	7	2	7	7	6	441
11:00	12	38	45	147	104	21	7	2	11	2	8	8	0	9	414
12:00	17	39	93	123	104	19	3	8	5	9	2	5	0	8	435
13:00	7	46	43	121	112	35	7	1	12	6	10	2	6	7	415
14:00	23	64	65	131	92	12	3	2	4	5	9	2	3	9	424
15:00	95	10	25	30	15	0	1	0	0	0	0	0	0	0	176
16:00	18	84	106	132	63	16	1	2	8	2	10	6	2	4	454
17:00	23	69	134	139	64	4	0	7	7	11	7	6	0	8	479
18:00	24	50	90	190	78	14	4	4	5	11	15	4	3	6	498
19:00	15	59	123	187	55	13	1	2	4	2	6	0	3	2	472
20:00	5	56	86	144	88	21	1	2	2	0	0	0	2	10	417
21:00	18	41	70	125	69	18	7	0	2	2	1	2	0	6	361
22:00	12	34	37	123	89	19	4	0	0	0	0	4	0	6	328
23:00	4	28	29	92	62	25	7	1	2	0	0	2	2	2	256
24:00	11	12	7	28	70	22	6	0	2	0	0	0	0	1	159
DAY TOTAL	355	890	1245	2323	1629	409	81	43	80	72	84	74	44	138	7467
PERCENTS	4.8%	11.9%	16.7%	31.1%	21.8%	5.5%	1.1%	0.6%	1.1%	1.0%	1.1%	1.0%	0.6%	1.8%	100.0%

Statistical Information...

15th Percentile Speed
15.6 mph

85th Percentile Speed
29.5 mph

Median Speed
22.9 mph

Average Speed
24.1 mph

10 MPH Pace Speed
20 mph to 30 mph
3952 vehicles in pace
Representing 56.7% of the total vehicles

Vehicles > 65 MPH
44
0.6%

Mass Highway Department

SPEED SUMMARY
Fri 4/14/2023

Page: 2

Station #: 230150000128
Site ID: 110000000103
Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
Direction: EAST
Lane: 1

File: D0413003.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	0	6	3	11	23	23	12	1	0	4	0	0	1	2	86
02:00	0	3	2	12	16	14	2	2	1	1	2	0	0	3	58
03:00	0	8	2	5	14	13	5	1	0	0	0	0	0	2	50
04:00	2	5	1	6	12	11	2	0	1	0	0	0	0	2	42
05:00	2	6	3	7	17	11	4	1	0	0	0	0	2	0	53
06:00	2	12	8	25	36	22	7	1	0	0	0	2	0	2	117
07:00	13	55	18	83	93	15	3	4	0	2	4	2	0	5	297
08:00	25	81	105	132	132	25	4	3	3	2	6	1	0	9	528
09:00	18	66	94	152	105	13	0	4	2	2	1	5	2	14	478
10:00	12	32	46	128	113	30	8	1	12	2	3	0	6	11	404
11:00	12	38	61	150	134	17	1	2	2	3	8	18	3	6	455
12:00	4	42	43	144	124	24	0	0	8	2	6	2	2	7	408
13:00	20	71	80	162	114	28	3	2	2	6	9	7	5	0	509
14:00	24	50	79	147	100	20	2	2	4	10	2	8	2	16	466
15:00	16	77	135	141	60	11	6	0	4	11	9	6	2	8	486
16:00	26	80	82	177	71	11	3	1	8	6	16	8	4	4	497
17:00	18	62	80	144	120	14	0	0	5	6	2	4	2	4	461
18:00	19	63	128	189	97	21	0	0	0	4	5	4	0	0	530
19:00	10	67	85	190	94	11	2	0	0	0	0	4	2	8	473
20:00	8	84	87	174	65	11	1	2	4	0	0	2	3	2	443
21:00	9	36	63	128	80	18	2	0	0	0	0	0	0	0	336
22:00	6	33	70	99	84	21	2	1	0	0	2	0	0	0	318
23:00	8	22	20	85	77	22	4	0	0	0	0	0	0	2	240
24:00	11	22	13	52	69	20	4	1	0	0	0	4	2	6	204
DAY TOTAL	265	1021	1308	2543	1850	426	77	29	56	61	75	77	38	113	7939
PERCENTS	3.3%	12.9%	16.5%	32.0%	23.3%	5.4%	1.0%	0.4%	0.7%	0.8%	0.9%	1.0%	0.5%	1.4%	100.0%

Statistical Information...

15th Percentile Speed
15.4 mph

85th Percentile Speed
29.2 mph

Median Speed
22.9 mph

Average Speed
23.7 mph

10 MPH Pace Speed
20 mph to 30 mph
4393 vehicles in pace
Representing 58.1% of the total vehicles

Vehicles > 65 MPH
38
0.5%

Mass Highway Department

SPEED SUMMARY
Sat 4/15/2023

Page: 3

Station #: 230150000128
Site ID: 110000000103
Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
Direction: EAST
Lane: 1

File: D0413003.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	1	3	6	21	39	23	11	1	2	0	0	0	2	6	115
02:00	1	5	8	18	26	18	4	0	0	0	1	0	0	4	85
03:00	0	3	2	7	17	15	7	1	0	0	0	0	0	4	56
04:00	0	4	4	5	14	7	4	1	0	0	0	0	0	0	39
05:00	2	3	2	1	8	14	4	3	0	0	0	0	0	3	40
06:00	0	4	2	6	24	17	5	0	0	0	0	0	2	0	60
07:00	6	20	12	29	56	29	12	4	0	0	0	0	0	4	172
08:00	0	19	10	37	92	27	8	0	1	0	0	0	0	0	194
09:00	17	33	17	82	122	31	7	4	0	0	0	0	3	5	321
10:00	4	36	37	94	106	37	2	0	0	0	0	0	2	8	326
11:00	10	25	29	123	101	26	3	2	0	0	2	1	3	6	331
12:00	17	43	48	167	86	16	1	0	0	0	0	0	2	5	385
13:00	8	36	60	158	95	16	2	0	1	0	0	0	2	10	388
14:00	15	60	85	141	94	13	4	0	4	2	6	0	2	9	435
15:00	6	38	77	144	100	21	5	2	3	2	2	2	2	6	410
16:00	12	71	78	174	105	16	2	1	1	5	2	2	0	5	474
17:00	19	43	69	152	102	22	5	0	4	6	2	2	0	3	429
18:00	10	48	75	177	112	16	2	2	2	4	0	0	0	7	455
19:00	11	53	78	163	76	7	2	0	1	0	0	0	0	7	398
20:00	8	43	77	140	69	16	4	2	0	0	0	2	0	2	363
21:00	8	36	59	137	90	14	1	0	0	1	0	2	6	10	364
22:00	9	47	43	112	87	24	2	0	1	3	3	0	4	2	337
23:00	8	26	26	96	84	23	4	3	0	0	0	0	0	7	277
24:00	5	22	21	68	63	20	3	2	0	0	0	2	2	0	208
DAY TOTAL	177	721	925	2252	1768	468	104	28	20	23	18	13	32	113	6662
PERCENTS	2.7%	10.8%	13.9%	33.8%	26.5%	7.0%	1.6%	0.4%	0.3%	0.3%	0.3%	0.2%	0.5%	1.7%	100.0%

Statistical Information...

15th Percentile Speed
16.3 mph

85th Percentile Speed
29.3 mph

Median Speed
23.4 mph

Average Speed
23.7 mph

10 MPH Pace Speed
20 mph to 30 mph
4020 vehicles in pace
Representing 63.1% of the total vehicles

Vehicles > 65 MPH
32
0.5%

Mass Highway Department

SPEED SUMMARY
Sun 4/16/2023

Station #: 230150000128
Site ID: 110000000103
Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
Direction: EAST
Lane: 1

File: D0413003.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	1	8	4	27	51	19	14	2	0	0	0	0	0	3	129
02:00	1	10	4	14	26	19	5	2	1	0	0	0	4	4	90
03:00	1	4	3	8	22	16	4	1	0	0	0	0	0	1	60
04:00	0	5	4	11	13	8	4	1	0	0	0	0	0	2	48
05:00	1	1	4	4	10	15	5	0	0	0	0	0	0	0	40
06:00	0	3	5	7	13	13	3	0	0	0	0	2	0	0	46
07:00	3	7	4	17	30	13	7	1	0	3	0	2	0	4	91
08:00	0	12	5	37	65	22	2	0	2	0	0	0	0	0	145
09:00	3	5	6	44	71	35	2	1	0	0	0	4	3	2	176
10:00	3	18	30	92	106	22	4	0	0	0	0	2	0	4	281
11:00	2	28	34	102	98	28	4	0	2	0	0	0	0	2	300
12:00	8	49	29	139	91	20	1	2	0	0	0	5	0	4	348
13:00	2	38	64	168	91	13	1	0	0	0	0	4	0	0	381
14:00	15	34	43	140	96	16	1	0	0	0	0	0	0	2	347
15:00	13	43	86	140	76	11	4	0	2	0	1	2	0	5	383
16:00	13	42	76	152	69	31	2	1	0	0	0	0	0	7	393
17:00	16	47	78	136	83	21	4	1	0	0	0	2	0	6	394
18:00	9	44	50	128	107	8	1	0	2	1	0	2	4	12	368
19:00	4	35	67	185	93	21	7	0	0	0	0	4	2	0	418
20:00	6	58	107	153	77	10	3	0	0	1	0	2	2	2	421
21:00	7	24	37	97	67	26	1	0	0	0	0	1	2	4	266
22:00	3	31	34	84	71	18	1	3	0	0	0	0	1	4	250
23:00	4	17	19	47	72	27	4	1	0	0	0	2	0	7	200
24:00	4	8	5	36	52	22	10	2	0	0	0	2	2	0	143
DAY TOTAL	119	571	798	1968	1550	454	94	18	9	5	1	36	20	75	5718
PERCENTS	2.1%	10.0%	14.0%	34.4%	27.1%	7.9%	1.6%	0.3%	0.2%	0.1%	0.0%	0.6%	0.3%	1.3%	100.0%

Statistical Information...

15th Percentile Speed
16.6 mph

85th Percentile Speed
29.4 mph

Median Speed
23.5 mph

Average Speed
23.8 mph

10 MPH Pace Speed
20 mph to 30 mph
3518 vehicles in pace
Representing 63.7% of the total vehicles

Vehicles > 65 MPH
20
0.4%

Mass Highway Department

SPEED SUMMARY
 Mon 4/17/2023

Page: 5

Station #: 230150000128
 Site ID: 110000000103
 Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
 Direction: EAST
 Lane: 1

File: D0413003.prn
 City: Lynn
 County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	0	5	8	11	37	23	10	3	0	0	0	2	0	12	111
02:00	2	7	3	6	28	8	2	2	0	0	0	0	0	2	60
03:00	2	2	3	7	13	8	1	2	0	0	0	0	0	0	38
04:00	3	5	0	7	6	8	4	1	0	0	0	0	0	0	34
05:00	3	2	4	4	6	16	4	2	0	0	0	0	0	0	41
06:00	1	9	3	17	33	14	5	1	0	0	0	0	0	5	88
07:00	2	26	12	48	76	33	7	1	0	1	0	0	2	0	208
08:00	6	26	24	68	103	32	3	0	1	0	0	4	0	4	271
09:00	3	21	32	80	107	33	6	0	0	0	0	0	4	2	288
10:00	10	27	30	101	99	24	4	0	0	0	0	2	2	6	305
11:00	6	35	31	99	114	25	3	3	0	0	0	2	7	0	325
12:00	5	31	39	101	118	18	4	0	0	0	0	3	4	2	325
13:00	10	37	60	145	99	13	5	2	0	0	0	2	3	0	376
14:00	11	41	50	150	107	17	1	0	0	0	0	0	2	2	381
15:00	8	59	52	149	105	21	2	1	1	0	0	0	3	0	401
16:00	6	33	39	160	81	16	2	2	0	6	0	4	0	4	353
17:00	11	54	77	145	100	13	1	0	1	2	0	0	0	0	404
18:00	15	54	98	162	94	9	2	0	0	0	0	2	2	0	438
19:00	12	38	66	159	77	6	3	1	1	0	2	1	0	2	368
20:00	8	43	62	117	66	17	1	0	0	0	0	0	0	2	316
21:00	5	29	22	114	89	22	3	0	0	0	2	0	0	8	294
22:00	4	18	24	89	68	12	3	2	1	0	0	0	0	0	221
23:00	6	22	20	52	45	18	2	0	0	0	0	4	0	7	176
24:00	2	5	12	40	58	24	4	0	0	0	0	0	2	4	151
DAY TOTAL	141	629	771	2031	1729	430	82	23	5	9	4	26	31	62	5973
PERCENTS	2.4%	10.5%	12.9%	34.0%	28.9%	7.2%	1.4%	0.4%	0.1%	0.2%	0.1%	0.4%	0.5%	1.0%	100.0%

Statistical Information...

15th Percentile Speed
 16.5 mph

85th Percentile Speed
 29.3 mph

Median Speed
 23.7 mph

Average Speed
 23.8 mph

10 MPH Pace Speed
 20 mph to 30 mph
 3760 vehicles in pace
 Representing 65.2% of the total vehicles

Vehicles > 65 MPH
 31
 0.5%

Mass Highway Department

SPEED SUMMARY
Tue 4/18/2023

Page: 6

Station #: 230150000128
Site ID: 110000000103
Location: Rte.129EB,W.of Hanover St/Beacon Hill Av
Direction: EAST
Lane: 1

File: D0413003.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	2	2	3	7	29	17	11	3	2	0	0	0	0	7	83
02:00	2	1	1	9	11	16	4	4	0	0	1	0	0	4	53
03:00	1	6	1	4	7	10	2	0	0	0	0	0	2	1	34
04:00	0	2	1	3	12	7	5	0	0	0	0	0	0	2	32
05:00	0	7	3	5	8	15	4	1	0	0	0	0	0	4	47
06:00	0	11	8	23	52	24	3	2	0	0	0	0	0	0	123
07:00	6	39	12	53	84	25	3	0	0	0	2	7	2	3	236
08:00	7	33	44	115	131	44	5	0	0	2	2	6	2	0	391
09:00	6	52	35	116	127	31	5	3	2	0	0	6	3	4	390
10:00	3	4	4	5	29	5	1	0	0	0	0	0	2	1	54
11:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAY TOTAL	27	157	112	340	491	194	43	13	4	2	5	19	11	26	1444
PERCENTS	1.9%	10.9%	7.8%	23.5%	34.0%	13.4%	3.0%	0.9%	0.3%	0.1%	0.3%	1.3%	0.8%	1.8%	100.0%

Statistical Information...

15th Percentile Speed
17.3 mph

85th Percentile Speed
32.1 mph

Median Speed
25.9 mph

Average Speed
25.9 mph

10 MPH Pace Speed
20 mph to 30 mph
831 vehicles in pace
Representing 59.7% of the total vehicles

Vehicles > 65 MPH
11
0.8%

Mass Highway Department

SPEED SUMMARY
 Mon 4/10/2023

Page: 1

STA. 1WB

Station #: 230150000063
 Site ID: 110000000104
 Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
 Direction: WEST
 Lane: 1

File: D0410015.prn
 City: Lynn
 County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
12:00	6	15	33	101	137	36	6	0	5	5	1	0	0	3	348
13:00	12	24	32	93	117	30	4	0	0	2	0	0	0	0	314
14:00	44	28	52	147	90	16	1	2	4	6	5	0	0	0	395
15:00	85	53	92	130	49	5	0	0	3	2	2	2	0	0	423
16:00	32	38	91	163	86	7	0	1	2	2	4	0	0	0	426
17:00	194	58	66	63	45	3	1	0	2	2	0	0	0	0	434
18:00	66	48	123	114	36	4	0	0	5	0	4	2	0	3	405
19:00	49	55	93	95	37	3	0	2	4	4	0	0	0	0	342
20:00	32	27	89	122	38	2	1	2	3	0	0	0	2	0	318
21:00	12	13	27	86	71	11	0	0	0	0	0	0	0	2	222
22:00	3	11	31	87	69	19	5	1	2	0	0	0	0	12	240
23:00	3	10	9	42	53	22	3	1	3	0	0	0	0	6	152
24:00	4	7	7	14	41	18	0	1	0	1	0	0	0	2	95
DAY TOTAL	542	387	745	1257	869	176	21	10	33	24	16	4	2	28	4114
PERCENTS	13.2%	9.4%	18.1%	30.6%	21.1%	4.3%	0.5%	0.2%	0.8%	0.6%	0.4%	0.1%	0.0%	0.7%	100.0%

Statistical Information...

15th Percentile Speed
 16.0 mph

85th Percentile Speed
 28.6 mph

Median Speed
 22.6 mph

Average Speed
 22.9 mph

10 MPH Pace Speed
 20 mph to 30 mph
 2126 vehicles in pace
 Representing 60.0% of the total vehicles

Vehicles > 65 MPH
 2
 0.1%

Mass Highway Department

SPEED SUMMARY
Tue 4/11/2023

Page: 2

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST
Lane: 1

File: D0410015.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	2	4	3	5	17	12	3	1	1	0	0	0	1	5	54
02:00	2	1	2	6	17	10	7	0	1	0	0	2	0	6	54
03:00	1	3	0	5	6	5	2	1	0	0	0	0	0	0	23
04:00	2	4	1	3	10	10	5	1	0	0	0	0	0	0	36
05:00	1	1	5	5	23	16	10	0	0	1	0	0	0	10	72
06:00	3	11	9	32	60	36	8	1	0	0	0	2	0	13	175
07:00	9	31	41	114	103	20	3	0	0	0	0	2	4	4	331
08:00	24	36	73	130	98	12	1	0	0	0	2	1	2	3	382
09:00	18	33	52	106	77	20	1	0	4	0	2	0	0	10	323
10:00	11	10	23	106	121	25	5	1	1	0	1	2	0	6	312
11:00	7	10	29	135	117	21	1	2	2	3	6	0	0	6	339
12:00	7	19	65	122	121	10	1	0	2	0	6	0	0	0	353
13:00	35	43	51	124	93	27	1	0	3	4	0	0	2	0	383
14:00	57	41	85	118	89	14	0	2	4	4	0	0	0	5	419
15:00	89	66	105	137	61	6	5	0	6	4	3	0	0	0	482
16:00	135	85	108	115	33	2	1	0	0	0	0	0	0	2	481
17:00	96	54	99	127	39	9	0	0	0	0	0	1	0	0	425
18:00	64	43	73	152	56	8	0	1	0	3	0	0	0	2	402
19:00	78	54	76	114	40	2	0	0	0	0	0	0	0	0	364
20:00	10	22	66	146	68	9	0	0	0	0	2	0	0	2	325
21:00	13	17	37	110	85	6	1	0	4	0	0	0	0	0	273
22:00	7	17	23	89	64	18	1	0	1	0	0	0	0	6	226
23:00	1	6	15	36	72	15	7	1	0	0	0	2	0	2	157
24:00	5	6	4	19	39	23	5	3	0	1	0	0	0	6	111
DAY TOTAL	677	617	1045	2056	1509	336	68	14	29	20	22	12	9	88	6502
PERCENTS	10.4%	9.5%	16.1%	31.6%	23.2%	5.2%	1.0%	0.2%	0.4%	0.3%	0.3%	0.2%	0.1%	1.4%	100.0%

Statistical Information...

15th Percentile Speed
16.2 mph

85th Percentile Speed
28.8 mph

Median Speed
22.9 mph

Average Speed
23.2 mph

10 MPH Pace Speed
20 mph to 30 mph
3565 vehicles in pace
Representing 62.1% of the total vehicles

Vehicles > 65 MPH
9
0.2%

Mass Highway Department

SPEED SUMMARY
Wed 4/12/2023

Page: 3

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST
Lane: 1

File: D0410015.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	1	6	3	9	21	12	3	1	1	1	0	0	0	0	58
02:00	1	5	2	6	18	13	8	4	0	0	0	0	0	8	65
03:00	0	0	3	0	12	8	3	0	0	0	0	0	0	0	26
04:00	1	1	0	3	8	9	8	0	0	0	0	0	0	0	30
05:00	1	4	2	7	18	22	12	1	0	0	0	0	0	2	69
06:00	5	8	7	22	66	37	15	1	2	0	0	0	0	2	165
07:00	7	21	34	97	131	23	1	0	0	0	0	2	0	4	320
08:00	28	38	56	125	87	15	4	0	0	0	0	0	2	0	355
09:00	27	35	44	107	77	19	3	1	2	0	0	0	1	2	318
10:00	9	16	21	95	115	29	2	2	0	4	0	0	0	6	299
11:00	7	15	31	100	112	20	3	0	1	0	0	1	0	0	290
12:00	9	16	33	97	116	22	2	1	1	0	0	0	0	0	297
13:00	16	12	52	130	113	22	2	0	0	2	0	0	0	2	351
14:00	50	57	116	99	32	2	2	0	0	0	0	0	0	0	358
15:00	100	71	81	132	55	4	0	0	1	4	0	0	0	0	448
16:00	78	54	110	118	43	4	1	0	2	0	0	0	2	0	412
17:00	123	57	75	118	45	5	1	0	0	2	0	2	0	2	430
18:00	87	64	106	103	45	4	0	0	1	2	0	0	0	1	413
19:00	31	41	87	130	56	7	2	0	4	0	0	0	2	1	361
20:00	13	31	52	130	73	6	1	0	0	1	0	0	0	4	311
21:00	21	22	67	124	65	12	3	0	0	0	0	0	0	0	314
22:00	12	21	41	85	67	16	1	0	0	0	0	0	0	0	243
23:00	6	11	13	33	70	20	2	0	0	0	0	0	2	5	162
24:00	3	4	5	27	43	14	2	2	0	0	0	0	0	10	110
DAY TOTAL	636	610	1041	1897	1488	345	81	13	15	16	0	5	9	49	6205
PERCENTS	10.2%	9.8%	16.8%	30.6%	24.0%	5.6%	1.3%	0.2%	0.2%	0.3%	0.0%	0.1%	0.1%	0.8%	100.0%

Statistical Information...

15th Percentile Speed
16.1 mph

85th Percentile Speed
28.9 mph

Median Speed
22.9 mph

Average Speed
23.0 mph

10 MPH Pace Speed
20 mph to 30 mph
3385 vehicles in pace
Representing 61.3% of the total vehicles

Vehicles > 65 MPH
9
0.2%

Mass Highway Department

SPEED SUMMARY
Thu 4/13/2023

Page: 4

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST
Lane: 1

File: D0410015.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	0	3	6	14	16	11	7	2	0	0	0	0	0	0	59
02:00	1	1	3	3	17	18	10	6	0	1	0	0	0	2	62
03:00	0	3	0	3	4	5	2	0	0	0	0	0	0	0	17
04:00	0	3	1	1	9	15	3	1	0	0	0	0	0	4	37
05:00	2	3	3	4	22	18	8	3	0	0	0	0	0	6	69
06:00	0	12	10	37	67	34	10	0	0	0	0	0	2	6	178
07:00	14	31	24	126	104	37	2	0	0	0	0	2	0	0	340
08:00	30	61	44	119	69	20	0	1	0	0	0	0	3	3	350
09:00	24	23	49	122	87	14	4	0	3	2	0	0	0	2	330
10:00	13	25	40	108	87	14	2	0	0	2	0	0	0	4	295
11:00	7	16	45	122	120	31	2	0	0	0	0	0	0	2	345
12:00	27	25	77	105	98	24	4	0	0	0	0	0	0	0	360
13:00	30	22	55	137	111	25	4	0	0	1	0	0	0	2	387
14:00	116	41	68	112	54	11	1	1	0	0	0	0	0	0	404
15:00	37	8	26	19	18	0	0	0	1	0	0	0	0	3	112
16:00	56	60	83	127	69	11	0	1	0	0	0	1	0	1	409
17:00	110	70	99	96	54	4	0	1	1	0	0	0	0	0	435
18:00	62	50	107	139	45	5	2	0	0	0	0	0	0	0	410
19:00	58	61	96	127	51	8	0	0	0	0	0	0	0	0	401
20:00	31	22	62	162	76	8	0	1	1	0	0	0	0	0	363
21:00	15	26	42	133	65	12	3	1	0	0	0	0	0	0	297
22:00	9	16	36	89	69	15	6	2	0	0	0	0	0	0	242
23:00	6	17	15	45	81	31	7	2	1	1	0	0	0	0	206
24:00	3	6	4	21	59	24	10	0	0	0	0	0	0	0	127
DAY TOTAL	651	605	995	1971	1452	395	87	22	7	7	0	3	5	35	6235
PERCENTS	10.4%	9.7%	16.0%	31.6%	23.3%	6.3%	1.4%	0.4%	0.1%	0.1%	0.0%	0.0%	0.1%	0.6%	100.0%

Statistical Information...

15th Percentile Speed
16.2 mph

85th Percentile Speed
29.0 mph

Median Speed
23.0 mph

Average Speed
23.0 mph

10 MPH Pace Speed
20 mph to 30 mph
3423 vehicles in pace
Representing 61.7% of the total vehicles

Vehicles > 65 MPH
5
0.1%

Mass Highway Department

SPEED SUMMARY
 Fri 4/14/2023

Page: 5

Station #: 230150000063
 Site ID: 110000000104
 Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
 Direction: WEST
 Lane: 1

File: D0410015.prn
 City: Lynn
 County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	0	8	0	5	23	13	11	2	2	3	3	0	0	1	71
02:00	0	1	3	8	28	16	5	5	0	0	1	0	0	0	67
03:00	2	4	0	3	14	15	3	0	0	0	0	0	0	0	41
04:00	2	4	1	2	7	13	6	6	0	0	0	1	0	0	42
05:00	1	3	4	8	18	21	16	2	0	0	0	0	0	0	73
06:00	1	5	7	27	46	45	11	2	0	0	0	0	0	0	144
07:00	18	20	21	83	134	41	8	2	0	0	0	0	0	1	328
08:00	35	34	38	104	115	30	1	0	0	0	0	0	0	0	357
09:00	12	31	30	119	88	22	9	1	0	0	0	0	0	0	312
10:00	9	15	18	88	127	43	6	0	0	0	0	0	0	0	306
11:00	10	23	26	103	141	35	5	2	0	0	0	0	0	0	345
12:00	17	16	30	131	104	22	2	1	0	0	0	0	0	0	323
13:00	64	50	52	129	87	15	3	0	0	0	0	0	0	0	400
14:00	94	46	60	125	87	16	2	0	0	0	0	0	0	0	430
15:00	138	73	88	99	66	9	0	0	0	0	0	0	0	0	473
16:00	54	62	97	158	79	7	1	0	0	0	0	0	0	0	458
17:00	101	43	82	126	45	7	3	0	0	0	0	0	0	1	408
18:00	146	85	65	102	40	8	2	0	0	0	0	0	0	0	448
19:00	62	46	68	118	55	15	0	0	0	0	0	0	0	0	364
20:00	29	25	80	131	75	10	0	0	0	0	0	0	0	0	350
21:00	27	34	55	147	67	11	3	0	0	0	0	0	0	0	344
22:00	5	15	52	105	75	18	3	1	0	0	0	0	0	0	274
23:00	6	10	10	72	82	29	5	3	0	0	0	0	0	0	217
24:00	8	9	5	25	67	23	7	0	1	0	0	0	0	0	145
DAY TOTAL	841	662	892	2018	1670	484	112	27	3	3	4	1	0	3	6720
PERCENTS	12.5%	9.9%	13.3%	30.0%	24.9%	7.2%	1.7%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	100.0%

Statistical Information...

15th Percentile Speed
 16.2 mph

85th Percentile Speed
 29.3 mph

Median Speed
 23.4 mph

Average Speed
 23.3 mph

10 MPH Pace Speed
 20 mph to 30 mph
 3688 vehicles in pace
 Representing 62.8% of the total vehicles

Vehicles > 65 MPH
 0
 0.0%

Mass Highway Department

SPEED SUMMARY
Sat 4/15/2023

Page: 6

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST
Lane: 1

File: D0410015.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	1	4	1	17	37	24	5	4	2	1	0	0	0	0	96
02:00	2	3	3	7	26	15	10	2	0	0	0	0	0	0	68
03:00	1	1	1	9	13	22	2	4	0	0	0	0	0	0	53
04:00	1	3	1	4	8	14	2	2	1	0	0	0	0	0	36
05:00	1	1	2	2	4	9	9	3	0	0	0	0	0	0	31
06:00	1	1	0	12	16	31	13	7	0	1	0	0	0	0	82
07:00	4	9	14	39	78	39	12	0	1	0	0	0	0	0	196
08:00	4	13	7	52	86	26	8	0	2	0	1	0	0	0	199
09:00	7	9	17	73	93	29	11	0	0	0	0	0	0	0	239
10:00	9	11	25	97	131	51	5	1	0	0	1	0	0	0	331
11:00	14	22	28	109	117	26	4	0	0	0	0	0	0	0	320
12:00	58	41	70	152	64	11	3	1	0	0	0	0	0	0	400
13:00	41	25	51	94	96	18	2	0	0	0	0	0	0	0	327
14:00	55	38	77	120	54	11	1	0	0	0	0	0	0	0	356
15:00	28	34	73	130	74	17	1	0	0	0	0	0	0	0	357
16:00	15	23	49	125	96	20	4	0	1	0	0	0	0	0	333
17:00	15	28	30	133	107	19	7	0	1	0	0	0	0	0	340
18:00	26	30	54	115	77	27	4	0	0	0	1	0	0	0	334
19:00	28	28	71	108	44	21	2	1	0	0	0	0	0	0	303
20:00	28	22	43	120	56	14	2	0	0	0	1	0	0	0	286
21:00	8	23	57	104	100	14	2	0	0	0	0	0	0	0	308
22:00	9	15	47	124	82	16	2	1	0	0	0	0	0	0	296
23:00	11	15	24	82	99	29	5	1	0	0	0	0	0	2	268
24:00	6	11	9	45	44	21	2	1	1	0	0	0	0	0	140
DAY TOTAL	373	410	754	1873	1602	524	118	28	9	2	4	0	0	2	5699
PERCENTS	6.5%	7.2%	13.2%	32.9%	28.1%	9.2%	2.1%	0.5%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	100.0%

Statistical Information...

15th Percentile Speed
17.6 mph

85th Percentile Speed
29.7 mph

Median Speed
24.0 mph

Average Speed
24.0 mph

10 MPH Pace Speed
20 mph to 30 mph
3475 vehicles in pace
Representing 65.3% of the total vehicles

Vehicles > 65 MPH
0
0.0%

Mass Highway Department

SPEED SUMMARY
Sun 4/16/2023

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST
Lane: 1

File: D0410015.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	3	3	9	21	28	26	6	1	0	0	0	0	0	0	97
02:00	0	9	3	9	38	24	9	4	1	0	0	0	0	0	97
03:00	0	1	3	3	21	21	6	1	0	0	0	0	0	0	56
04:00	4	1	2	3	15	11	10	4	1	0	0	0	0	0	51
05:00	0	1	5	4	7	9	6	3	1	1	0	0	0	0	37
06:00	2	2	2	7	11	24	12	0	0	0	0	0	0	0	60
07:00	4	4	3	9	24	29	5	2	1	1	0	0	0	0	82
08:00	3	4	4	36	39	15	8	1	0	0	2	0	1	1	114
09:00	6	5	10	40	57	37	6	0	0	0	0	0	0	0	161
10:00	13	13	24	82	107	33	4	1	0	0	0	0	0	0	277
11:00	8	18	23	90	110	26	4	0	0	0	0	0	0	0	279
12:00	15	17	31	107	104	23	4	0	0	0	0	0	0	0	301
13:00	8	26	77	150	104	14	1	0	0	0	0	0	0	0	380
14:00	24	23	42	144	95	20	2	0	0	0	0	0	0	0	350
15:00	52	47	68	103	71	15	0	1	0	0	0	0	0	0	357
16:00	15	24	42	105	97	24	3	1	0	0	0	0	0	0	311
17:00	17	21	65	116	64	22	4	0	1	0	0	0	0	0	310
18:00	26	29	38	92	92	17	5	0	0	0	0	0	0	0	299
19:00	23	46	66	116	76	16	3	0	0	0	0	0	0	0	346
20:00	27	17	66	116	65	12	3	0	0	0	1	0	0	0	307
21:00	10	27	18	90	75	18	5	0	0	0	0	0	0	0	243
22:00	7	15	21	77	78	20	3	3	0	0	0	0	0	0	224
23:00	6	14	11	62	71	24	5	1	0	0	0	0	0	0	194
24:00	5	6	3	32	48	22	10	0	0	0	0	0	0	0	126
DAY TOTAL	278	373	636	1614	1497	502	124	23	5	2	3	0	1	1	5059
PERCENTS	5.5%	7.4%	12.6%	31.9%	29.6%	9.9%	2.5%	0.5%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	100.0%

Statistical Information...

15th Percentile Speed
17.7 mph

85th Percentile Speed
29.8 mph

Median Speed
24.3 mph

Average Speed
24.2 mph

10 MPH Pace Speed
20 mph to 30 mph
3111 vehicles in pace
Representing 65.1% of the total vehicles

Vehicles > 65 MPH
1
0.0%

Mass Highway Department

SPEED SUMMARY
 Mon 4/17/2023

Page: 8

Station #: 230150000063
 Site ID: 110000000104
 Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
 Direction: WEST
 Lane: 1

File: D0410015.prn
 City: Lynn
 County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	1	5	4	14	29	20	15	5	2	0	0	0	0	0	95
02:00	1	6	3	6	36	14	7	3	1	0	0	0	0	0	77
03:00	1	5	0	3	9	10	7	2	2	0	0	0	0	0	39
04:00	0	2	0	6	6	14	9	2	0	0	0	0	0	0	39
05:00	3	5	0	9	16	23	12	5	0	0	1	0	0	0	74
06:00	0	4	3	17	42	32	23	8	1	0	0	0	0	0	130
07:00	2	16	9	48	116	51	10	2	0	0	0	0	0	0	254
08:00	9	13	11	48	81	36	10	0	1	0	0	0	0	0	209
09:00	10	14	23	65	72	21	11	1	0	0	0	0	0	0	217
10:00	11	16	20	94	105	36	7	1	0	0	0	0	0	0	290
11:00	3	7	26	86	110	24	4	0	0	0	0	0	0	0	260
12:00	16	15	32	86	110	22	2	0	1	0	0	0	0	0	284
13:00	17	20	50	124	90	26	0	0	0	0	0	0	0	0	327
14:00	36	36	62	134	75	8	3	0	0	0	0	0	0	0	354
15:00	19	27	37	138	78	14	4	0	0	0	0	0	0	0	317
16:00	20	29	50	108	95	17	4	0	0	0	0	0	0	0	323
17:00	20	26	57	135	82	13	0	0	0	0	0	0	0	0	333
18:00	46	45	55	109	77	12	2	0	0	0	0	0	0	0	346
19:00	18	26	37	111	88	11	2	0	0	0	0	0	0	0	293
20:00	21	15	36	93	74	15	4	0	0	0	0	0	0	0	258
21:00	7	18	26	109	66	24	1	0	0	0	0	0	0	0	251
22:00	6	10	16	66	71	20	4	1	0	0	0	0	0	0	194
23:00	2	10	14	54	40	26	2	0	0	0	0	0	0	0	148
24:00	2	4	6	18	45	19	6	1	0	0	0	0	0	0	101
DAY TOTAL	271	374	577	1681	1613	508	149	31	8	0	1	0	0	0	5213
PERCENTS	5.2%	7.2%	11.1%	32.2%	30.9%	9.7%	2.9%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Statistical Information...

15th Percentile Speed
 18.2 mph

85th Percentile Speed
 29.9 mph

Median Speed
 24.5 mph

Average Speed
 24.5 mph

10 MPH Pace Speed
 20 mph to 30 mph
 3294 vehicles in pace
 Representing 66.7% of the total vehicles

Vehicles > 65 MPH
 0
 0.0%

Mass Highway Department

SPEED SUMMARY
Tue 4/18/2023

Page: 9

Station #: 230150000063
Site ID: 110000000104
Location: Rte.129WB,W.of Hanover St/Beacon Hill Av
Direction: WEST
Lane: 1

File: D0410015.prn
City: Lynn
County: speed

TIME	10	15	20	25	30	35	40	45	50	55	60	65	70	250	Total
01:00	1	5	5	3	16	12	12	1	0	0	0	0	0	0	55
02:00	1	2	1	9	9	15	10	3	0	0	0	0	0	0	50
03:00	1	3	0	0	6	11	3	0	1	0	0	0	0	0	25
04:00	0	1	1	4	8	10	6	1	1	0	1	0	0	0	33
05:00	0	4	1	8	18	21	14	2	1	0	0	0	0	0	69
06:00	0	7	10	24	57	41	13	3	0	0	0	0	0	0	155
07:00	1	13	17	69	128	47	9	3	1	0	0	0	0	0	288
08:00	11	14	14	58	100	47	13	1	1	0	0	0	0	0	259
09:00	12	20	12	72	99	43	8	1	0	0	1	0	0	0	268
DAY TOTAL	27	69	61	247	441	247	88	15	5	0	2	0	0	0	1202
PERCENTS	2.2%	5.7%	5.1%	20.5%	36.7%	20.5%	7.3%	1.2%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	100.0%

Statistical Information...

15th Percentile Speed
20.9 mph

85th Percentile Speed
33.7 mph

Median Speed
27.4 mph

Average Speed
27.2 mph

10 MPH Pace Speed
20 mph to 30 mph
688 vehicles in pace
Representing 58.6% of the total vehicles

Vehicles > 65 MPH
0
0.0%

Appendix D: Highway Capacity Manual Methodology

Intersection Level of Service Criteria

Level of Service	Signalized Intersection Control Delay (seconds per vehicle)	Unsignalized Intersection Control Delay (seconds per vehicle)
A	<10	<10
B	10–20	10–15
C	20–35	15–25
D	35–55	25–35
E	55–80	35–50
F	>80	>50

Source: Highway Capacity Manual 2010.

HCS Warrants Report

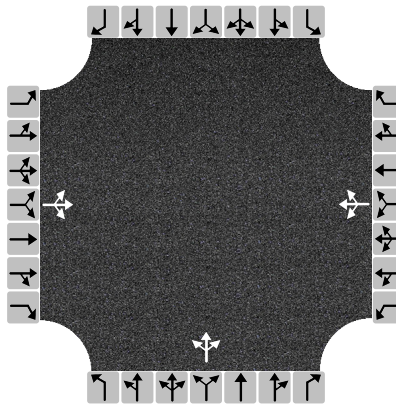
Project Information

Analyst	Julie Dombroski	Date	7/11/2023
Agency	CTPS	Analysis Year	2023
Jurisdiction		Time Period Analyzed	
Project Description			

General

Major Street Direction	East-West	Population < 10,000	No
Starting Time Interval	6	Coordinated Signal System	No
Median Type	Undivided	Crashes (crashes/year)	8
Major Street Speed (mi/h)	0	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	1089		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Number of Lanes, N	0	1	0	0	1	0	0	1	0	0	0	0
Lane Usage		LTR			LTR			LTR				
Vehicle Volumes Averages (veh/h)	36	182	37	51	177	38	14	91	24	0	0	0
Pedestrian Averages (peds/h)	7			6			15			11		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.3			0.5			47.5			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)	-	Tractor-Trailer Trucks (%)	10

Volume Summary														
Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (80%)	4A (100%)	4B (80%)
07 - 08	610	62	672	23	0	No	No	No	Yes	No	No	No	No	No
08 - 09	923	101	1024	43	0	No	No	Yes	Yes	No	No	No	No	No
09 - 10	872	125	997	49	0	No	Yes	Yes	Yes	No	No	No	No	No
10 - 11	726	74	800	55	0	No	No	No	Yes	No	No	No	No	No
11 - 12	0	0	0	0	0	No	No	No	No	No	No	No	No	No
12 - 13	0	0	0	0	0	No	No	No	No	No	No	No	No	No
13 - 14	0	0	0	0	0	No	No	No	No	No	No	No	No	No
14 - 15	0	0	0	0	0	No	No	No	No	No	No	No	No	No
15 - 16	617	255	872	104	0	Yes	Yes	No	Yes	Yes	No	No	No	No
16 - 17	931	196	1127	91	0	Yes	Yes	Yes	Yes	Yes	No	No	No	No
17 - 18	997	250	1247	65	0	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
18 - 19	617	506	1123	67	0	Yes	Yes	No	Yes	Yes	No	Yes	No	No
Total	6293	1569	7862	497	0	4	5	4	8	4	0	2	0	0

Warrants	
Warrant 1: Eight-Hour Vehicular Volume	
A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	
80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	
Warrant 2: Four-Hour Vehicular Volume	
Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)	✓
Warrant 3: Peak Hour	
A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--	
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	✓
Warrant 4: Pedestrian Volume	
A. Four Hour Volumes --or--	
B. One-Hour Volumes	
Warrant 5: School Crossing	
Gaps Same Period --and--	
Student Volumes	
Nearest Traffic Control Signal (optional)	✓
Warrant 6: Coordinated Signal System	
Degree of Platooning (Predominant direction or both directions)	
Warrant 7: Crash Experience	
A. Adequate trials of alternatives, observance and enforcement failed --and--	
B. Reported crashes susceptible to correction by signal (12-month period) --and--	✓
C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied	✓
Warrant 8: Roadway Network	
A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--	
B. Weekend Volume (Five hours total)	
Warrant 9: Grade Crossing	
A. Grade Crossing within 140 ft --and--	
B. Peak-Hour Vehicular Volumes	

**Appendix E: Washington Street at Hanover Street,
Existing Conditions**

Washington St at Hanover St
Existing Conditions

AM
09/22/2023

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	67	370	77	131	294	41	19	96	25	0	0	0
Future Vol, veh/h	67	370	77	131	294	41	19	96	25	0	0	0
Conflicting Peds, #/hr	17	0	28	33	0	22	28	0	33	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	402	84	142	320	45	21	104	27	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	387	0	0	519	0	0	1278	1294	510
Stage 1	-	-	-	-	-	-	623	623	-
Stage 2	-	-	-	-	-	-	655	671	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1171	-	-	1047	-	-	183	163	563
Stage 1	-	-	-	-	-	-	535	478	-
Stage 2	-	-	-	-	-	-	517	455	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1171	-	-	1014	-	-	130	0	528
Mov Cap-2 Maneuver	-	-	-	-	-	-	130	0	-
Stage 1	-	-	-	-	-	-	474	0	-
Stage 2	-	-	-	-	-	-	414	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	1.1			2.6			48.1		
HCM LOS							E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	227	1171	-	-	1014	-	-
HCM Lane V/C Ratio	0.67	0.062	-	-	0.14	-	-
HCM Control Delay (s)	48.1	8.3	0	-	9.1	0	-
HCM Lane LOS	E	A	A	-	A	A	-
HCM 95th %tile Q(veh)	4.2	0.2	-	-	0.5	-	-

Washington St at Hanover St
Existing Condition

PM
09/22/2023

Intersection												
Int Delay, s/veh	16											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	77	309	63	80	386	82	22	180	48	0	0	0
Future Vol, veh/h	77	309	63	80	386	82	22	180	48	0	0	0
Conflicting Peds, #/hr	29	0	32	36	0	33	32	0	36	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	336	68	87	420	89	24	196	52	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	542	0	0	440	0	0	1245	1290	442
Stage 1	-	-	-	-	-	-	574	574	-
Stage 2	-	-	-	-	-	-	671	716	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1027	-	-	1120	-	-	192	163	615
Stage 1	-	-	-	-	-	-	563	503	-
Stage 2	-	-	-	-	-	-	508	434	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1027	-	-	1082	-	-	142	0	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	0	-
Stage 1	-	-	-	-	-	-	486	0	-
Stage 2	-	-	-	-	-	-	436	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.5	1.3	74.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	293	1027	-	-	1082	-	-
HCM Lane V/C Ratio	0.927	0.081	-	-	0.08	-	-
HCM Control Delay (s)	74.4	8.8	0	-	8.6	0	-
HCM Lane LOS	F	A	A	-	A	A	-
HCM 95th %tile Q(veh)	8.9	0.3	-	-	0.3	-	-

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

Appendix F: Freeman Square, Existing Conditions

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	76	83	35	0	0	0	43	199	59	73	208	95
Future Vol, veh/h	76	83	35	0	0	0	43	199	59	73	208	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	83	90	38	0	0	0	47	216	64	79	226	103
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	11.5	12.2	14
HCM LOS	B	B	B

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	14%	39%	19%
Vol Thru, %	66%	43%	55%
Vol Right, %	20%	18%	25%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	301	194	376
LT Vol	43	76	73
Through Vol	199	83	208
RT Vol	59	35	95
Lane Flow Rate	327	211	409
Geometry Grp	1	1	1
Degree of Util (X)	0.457	0.333	0.558
Departure Headway (Hd)	5.033	5.677	4.913
Convergence, Y/N	Yes	Yes	Yes
Cap	720	633	736
Service Time	3.045	3.712	2.922
HCM Lane V/C Ratio	0.454	0.333	0.556
HCM Control Delay	12.2	11.5	14
HCM Lane LOS	B	B	B
HCM 95th-tile Q	2.4	1.5	3.5

Intersection	
Intersection Delay, s/veh	24.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	177	108	23	0	0	0	37	362	43	87	258	92
Future Vol, veh/h	177	108	23	0	0	0	37	362	43	87	258	92
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	192	117	25	0	0	0	40	393	47	95	280	100
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	19.3	26.6	25.5
HCM LOS	C	D	D

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	8%	57%	20%
Vol Thru, %	82%	35%	59%
Vol Right, %	10%	7%	21%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	442	308	437
LT Vol	37	177	87
Through Vol	362	108	258
RT Vol	43	23	92
Lane Flow Rate	480	335	475
Geometry Grp	1	1	1
Degree of Util (X)	0.778	0.606	0.765
Departure Headway (Hd)	5.829	6.518	5.797
Convergence, Y/N	Yes	Yes	Yes
Cap	615	549	618
Service Time	3.922	4.613	3.891
HCM Lane V/C Ratio	0.78	0.61	0.769
HCM Control Delay	26.6	19.3	25.5
HCM Lane LOS	D	C	D
HCM 95th-tile Q	7.3	4	7

Appendix G: 2030 No Build Analysis

Washington St at Hanover St
No Build

AM
09/22/2023

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	67	370	77	131	294	41	19	96	25	0	0	0
Future Vol, veh/h	67	370	77	131	294	41	19	96	25	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	430	90	152	342	48	22	112	29	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	390	0	0	520	0	0	1301	1325	475
Stage 1	-	-	-	-	-	-	631	631	-
Stage 2	-	-	-	-	-	-	670	694	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1169	-	-	1046	-	-	178	156	590
Stage 1	-	-	-	-	-	-	530	474	-
Stage 2	-	-	-	-	-	-	509	444	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1169	-	-	1046	-	-	131	0	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	0	-
Stage 1	-	-	-	-	-	-	480	0	-
Stage 2	-	-	-	-	-	-	414	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	1.1			2.5			48.9		
HCM LOS							E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	235	1169	-	-	1046	-	-
HCM Lane V/C Ratio	0.693	0.067	-	-	0.146	-	-
HCM Control Delay (s)	48.9	8.3	0	-	9	0	-
HCM Lane LOS	E	A	A	-	A	A	-
HCM 95th %tile Q(veh)	4.5	0.2	-	-	0.5	-	-

Washington St at Hanover St
No Build

PM
09/22/2023

Intersection												
Int Delay, s/veh	15.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	77	309	63	80	386	82	22	180	48	0	0	0
Future Vol, veh/h	77	309	63	80	386	82	22	180	48	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	359	73	93	449	95	26	209	56	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	544	0	0	432	0	0	1259	1306	396
Stage 1	-	-	-	-	-	-	576	576	-
Stage 2	-	-	-	-	-	-	683	730	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1025	-	-	1128	-	-	188	~ 160	653
Stage 1	-	-	-	-	-	-	562	502	-
Stage 2	-	-	-	-	-	-	502	428	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1025	-	-	1128	-	-	146	0	653
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	0	-
Stage 1	-	-	-	-	-	-	496	0	-
Stage 2	-	-	-	-	-	-	442	0	-

Approach	EB			WB			NB		
HCM Control Delay, s	1.5			1.2			72.5		
HCM LOS							F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	312	1025	-	-	1128	-	-
HCM Lane V/C Ratio	0.932	0.087	-	-	0.082	-	-
HCM Control Delay (s)	72.5	8.8	0	-	8.5	0	-
HCM Lane LOS	F	A	A	-	A	A	-
HCM 95th %tile Q(veh)	9.2	0.3	-	-	0.3	-	-

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

**Appendix H: Washington Street at Hanover Street,
2030 Alternatives One and Two**

Intersection	
Intersection Delay, s/veh	26.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	67	370	77	131	294	41	19	96	25	0	0	0
Future Vol, veh/h	67	370	77	131	294	41	19	96	25	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	430	90	152	342	48	22	112	29	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	31.6	26	12.4
HCM LOS	D	D	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	14%	13%	28%
Vol Thru, %	69%	72%	63%
Vol Right, %	18%	15%	9%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	140	514	466
LT Vol	19	67	131
Through Vol	96	370	294
RT Vol	25	77	41
Lane Flow Rate	163	598	542
Geometry Grp	1	1	1
Degree of Util (X)	0.297	0.86	0.798
Departure Headway (Hd)	6.56	5.178	5.303
Convergence, Y/N	Yes	Yes	Yes
Cap	545	699	683
Service Time	4.622	3.221	3.349
HCM Lane V/C Ratio	0.299	0.856	0.794
HCM Control Delay	12.4	31.6	26
HCM Lane LOS	B	D	D
HCM 95th-tile Q	1.2	10.1	8

Intersection	
Intersection Delay, s/veh	47.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Vol, veh/h	77	309	63	80	386	82	22	180	48	0	0	0
Future Vol, veh/h	77	309	63	80	386	82	22	180	48	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	359	73	93	449	95	26	209	56	0	0	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	0	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	35.8	71.1	18.1
HCM LOS	E	F	C

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	9%	17%	15%
Vol Thru, %	72%	69%	70%
Vol Right, %	19%	14%	15%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	250	449	548
LT Vol	22	77	80
Through Vol	180	309	386
RT Vol	48	63	82
Lane Flow Rate	291	522	637
Geometry Grp	1	1	1
Degree of Util (X)	0.549	0.863	1.04
Departure Headway (Hd)	6.938	6.076	5.876
Convergence, Y/N	Yes	Yes	Yes
Cap	523	601	625
Service Time	4.938	4.076	3.876
HCM Lane V/C Ratio	0.556	0.869	1.019
HCM Control Delay	18.1	35.8	71.1
HCM Lane LOS	C	E	F
HCM 95th-tile Q	3.3	9.7	17.1

Washington St at Hanover St
Alternative Two

AM
09/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	67	370	77	131	294	41	19	96	25	0	0	0
Future Volume (vph)	67	370	77	131	294	41	19	96	25	0	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.98			0.99			0.98				
Flt Protected		0.99			0.99			0.99				
Satd. Flow (prot)		1813			1815			1806				
Flt Permitted		0.88			0.72			0.99				
Satd. Flow (perm)		1606			1332			1806				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	107%	107%	107%	107%	107%	107%	107%	107%	107%	100%	100%	100%
Adj. Flow (vph)	78	430	90	152	342	48	22	112	29	0	0	0
RTOR Reduction (vph)	0	6	0	0	4	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	592	0	0	538	0	0	155	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)		33.8			33.8			18.9				
Effective Green, g (s)		33.8			33.8			18.9				
Actuated g/C Ratio		0.55			0.55			0.31				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		879			729			553				
v/s Ratio Prot												
v/s Ratio Perm		0.37			0.40			0.09				
v/c Ratio		0.67			0.74			0.28				
Uniform Delay, d1		10.0			10.6			16.2				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		2.0			3.9			1.3				
Delay (s)		12.0			14.5			17.5				
Level of Service		B			B			B				
Approach Delay (s)		12.0			14.5			17.5			0.0	
Approach LOS		B			B			B			A	
Intersection Summary												
HCM 2000 Control Delay			13.8									B
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			61.7						12.0			
Intersection Capacity Utilization			65.8%									C
Analysis Period (min)			15									
c Critical Lane Group												

Washington St at Hanover St
Alternative Two

PM
09/22/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	77	309	63	80	386	82	22	180	48	0	0	0
Future Volume (vph)	77	309	63	80	386	82	22	180	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5				
Lane Util. Factor		1.00			1.00			1.00				
Frt		0.98			0.98			0.97				
Flt Protected		0.99			0.99			1.00				
Satd. Flow (prot)		1812			1812			1806				
Flt Permitted		0.84			0.88			1.00				
Satd. Flow (perm)		1527			1601			1806				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	107%	107%	107%	107%	107%	107%	107%	107%	107%	100%	100%	100%
Adj. Flow (vph)	90	359	73	93	449	95	26	209	56	0	0	0
RTOR Reduction (vph)	0	7	0	0	8	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	515	0	0	629	0	0	280	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4			8			2					
Actuated Green, G (s)		27.3			27.3			13.4				
Effective Green, g (s)		27.3			27.3			13.4				
Actuated g/C Ratio		0.50			0.50			0.24				
Clearance Time (s)		4.5			4.5			4.5				
Vehicle Extension (s)		3.0			3.0			3.0				
Lane Grp Cap (vph)		762			799			442				
v/s Ratio Prot												
v/s Ratio Perm		0.34			0.39			0.16				
v/c Ratio		0.68			0.79			0.63				
Uniform Delay, d1		10.4			11.3			18.5				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		2.4			5.2			3.0				
Delay (s)		12.7			16.5			21.4				
Level of Service		B			B			C				
Approach Delay (s)		12.7			16.5			21.4			0.0	
Approach LOS		B			B			C			A	
Intersection Summary												
HCM 2000 Control Delay			16.1									B
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			54.7						12.0			
Intersection Capacity Utilization			62.7%									B
Analysis Period (min)			15									
c Critical Lane Group												

Appendix I: Freeman Square, Alternatives One and Two

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	75	83	35	0	0	0	10	199	59	87	258	75
Future Vol, veh/h	75	83	35	0	0	0	10	199	59	87	258	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	97	41	0	0	0	12	231	69	101	300	87
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	12.2	12.3	17.9
HCM LOS	B	B	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	4%	39%	21%
Vol Thru, %	74%	43%	61%
Vol Right, %	22%	18%	18%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	268	193	420
LT Vol	10	75	87
Through Vol	199	83	258
RT Vol	59	35	75
Lane Flow Rate	312	224	488
Geometry Grp	1	1	1
Degree of Util (X)	0.447	0.365	0.678
Departure Headway (Hd)	5.164	5.855	5
Convergence, Y/N	Yes	Yes	Yes
Cap	698	615	723
Service Time	3.198	3.893	3.03
HCM Lane V/C Ratio	0.447	0.364	0.675
HCM Control Delay	12.3	12.2	17.9
HCM Lane LOS	B	B	C
HCM 95th-tile Q	2.3	1.7	5.3

Freeman Square
No Build and Alternative One

PM
09/22/2023

Intersection	
Intersection Delay, s/veh	28.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	177	108	23	0	0	0	40	362	43	73	208	102
Future Vol, veh/h	177	108	23	0	0	0	40	362	43	73	208	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	206	126	27	0	0	0	47	421	50	85	242	119
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	22	35.5	24.9
HCM LOS	C	E	C

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	9%	57%	19%
Vol Thru, %	81%	35%	54%
Vol Right, %	10%	7%	27%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	445	308	383
LT Vol	40	177	73
Through Vol	362	108	208
RT Vol	43	23	102
Lane Flow Rate	518	358	445
Geometry Grp	1	1	1
Degree of Util (X)	0.862	0.664	0.747
Departure Headway (Hd)	5.997	6.669	6.039
Convergence, Y/N	Yes	Yes	Yes
Cap	606	541	597
Service Time	4.037	4.709	4.082
HCM Lane V/C Ratio	0.855	0.662	0.745
HCM Control Delay	35.5	22	24.9
HCM Lane LOS	E	C	C
HCM 95th-tile Q	9.7	4.9	6.6

Intersection				
Intersection Delay, s/veh	8.7			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	225	0	312	488
Demand Flow Rate, veh/h	230	0	318	498
Vehicles Circulating, veh/h	409	337	291	12
Vehicles Exiting, veh/h	101	272	348	325
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	125	78	83	125
Ped Cap Adj	0.978	0.989	0.989	0.972
Approach Delay, s/veh	8.8	0.0	9.0	8.5
Approach LOS	A	-	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	T	LTR	LTR
Assumed Moves	LTR	T	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	230	0	318	498
Cap Entry Lane, veh/h	751	807	845	1116
Entry HV Adj Factor	0.979	1.000	0.982	0.980
Flow Entry, veh/h	225	0	312	488
Cap Entry, veh/h	719	798	820	1064
V/C Ratio	0.313	0.000	0.381	0.459
Control Delay, s/veh	8.8	4.5	9.0	8.5
LOS	A	A	A	A
95th %tile Queue, veh	1	0	2	2

Intersection				
Intersection Delay, s/veh	14.2			
Intersection LOS	B			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	359	0	514	437
Demand Flow Rate, veh/h	367	0	524	446
Vehicles Circulating, veh/h	334	683	426	44
Vehicles Exiting, veh/h	156	267	275	639
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	145	88	145	131
Ped Cap Adj	0.968	0.988	0.970	0.969
Approach Delay, s/veh	11.1	0.0	21.4	8.2
Approach LOS	B	-	C	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	T	LTR	LTR
Assumed Moves	LTR	T	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193
Entry Flow, veh/h	367	0	524	446
Cap Entry Lane, veh/h	809	571	738	1081
Entry HV Adj Factor	0.979	1.000	0.980	0.980
Flow Entry, veh/h	359	0	514	437
Cap Entry, veh/h	767	564	702	1027
V/C Ratio	0.469	0.000	0.732	0.426
Control Delay, s/veh	11.1	6.4	21.4	8.2
LOS	B	A	C	A
95th %tile Queue, veh	3	0	6	2

Appendix J: Review Comments

RE: [EXTERNAL] Lynn Intersection Studies

1 message

Clausen, Aaron <aclausen@lynnma.gov>

Fri, Oct 13, 2023 at 4:00 PM

To: Seth Asante <sasante@ctps.org>

Cc: "Andrew J. Hall" <ahall@lynnma.gov>, "Lauren.Drago" <Lauren.Drago@lynnma.gov>

Hi Seth,

Thank you for all of your work on this, and providing us with multiple options to consider (both short term & long term). We don't have a ton of comments or questions but wanted to offer up the following:

- Is it possible to provide a general budget for both temporary / short-term implementation projects? It would be helpful for us if we were to put together a grant application for Shared Streets and Spaces grants or the like.

Freeman Sq.

- Although Silsbee is relatively narrow wondering if two-traffic could be accommodated without losing on-street parking to open up connections to the commuter rail station.
- Alternative #1 – is there an opportunity to remove or de-emphasize the traffic islands and square up and bump out curb at the east approach to Silsbee? I recognize they create some sense of order through the intersection. Also, is there an ability to bump curb out where there is no parking east bound on Union once through the intersection?

Bus Stop Enhancements

We are working to identify improvements to existing bus stops; primarily by providing new shelters however in many cases, particularly constrained streets like these, we are finding the sidewalks are too narrow to effectively accommodate shelters. Can you look at the ability to introduce new shelters. Can you generally look at feasibility to include new shelters at existing stops? Specifically:

- Westbound on Union in front of Lynn Community Health Center – there appears to be some sidewalk space there
- The following would likely need some curb extension to accommodate a shelter but worth looking at: Buffum St. westbound, Union St eastbound, Washington Street stop.

That's all we have,

Thanks again and please feel free to reach out if you have any additional questions.

Aaron

From: Seth Asante <sasante@ctps.org>

Sent: Tuesday, October 10, 2023 10:19 AM

To: Clausen, Aaron <aclausen@lynnma.gov>

Cc: Andrew J. Hall <ahall@lynmma.gov>; Lauren.Drago <Lauren.Drago@lynmma.gov>
Subject: Re: [EXTERNAL] Lynn Intersection Studies

Good morning Aaron,

I just wanted to quickly touch base with you about the Lynn Intersection Studies. Let me know if you need more time to review the memo.

Thanks,

Seth

Seth Asante
Chief Transportation Planner
Central Transportation Planning Staff
Boston Region Metropolitan Planning Organization
[857.702.3644](tel:857.702.3644) | sasante@ctps.org | bostonmpo.org

On Wed, Sep 27, 2023 at 4:55 PM Clausen, Aaron <aclausen@lynmma.gov> wrote:

Thank you Seth,

Circulating the memo internally and will work to have comments back to you by that time.

Aaron

From: Seth Asante <sasante@ctps.org>
Sent: Tuesday, September 26, 2023 10:20 AM
To: Clausen, Aaron <aclausen@lynmma.gov>
Subject: [EXTERNAL] Lynn Intersection Studies

Good morning, Aaron,

The technical memorandum for the Lynn Intersection Studies is available for review.

Please provide me with your comments by October 4. As usual, let me know if you have any questions.

Thank you,
Seth

Seth Asante
Chief Transportation Planner
Central Transportation Planning Staff
Boston Region Metropolitan Planning Organization
[857.702.3644](tel:857.702.3644) | sasante@ctps.org | bostonmpo.org

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RE: Lynn Intersection Studies

1 message

Snyder, Patrick L. (DOT) <Patrick.L.Snyder@dot.state.ma.us>
To: Seth Asante <sasante@ctps.org>

Tue, Oct 3, 2023 at 2:54 PM

Looks good, Seth. Thank you for sending over.

Are there dimensional constraints at these intersections that prevent recommending improved bicycle facilities (beyond sharrows)?

Did you determine if the roundabout alternative for Freeman Square can fit within the existing ROW? Either way, should be mentioned.

Kind regards,

Patrick

Patrick Snyder (he/him)

Multimodal Planning | Office of Transportation Planning | MassDOT

10 Park Plaza, Suite 4150, Boston, MA 02116

E: patrick.l.snyder@dot.state.ma.us | T: +1 (857) 301-0804

From: Seth Asante <sasante@ctps.org>
Sent: Tuesday, September 26, 2023 10:24 AM
To: Snyder, Patrick L. (DOT) <Patrick.L.Snyder@dot.state.ma.us>
Subject: Lynn Intersection Studies

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Good morning, Patrick,

The technical memorandum for the Lynn Intersection Studies is available for review.

Please provide me with your comments by October 4. As usual, let me know if you have any questions.

Thank you,
Seth

Seth Asante
Chief Transportation Planner
Central Transportation Planning Staff
Boston Region Metropolitan Planning Organization
[857.702.3644](tel:857.702.3644) | sasante@ctps.org | bostonmpo.org

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Title VI Specialist
Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116
civilrights@ctps.org

By Telephone:

857.702.3700 (voice)

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