MEMORANDUM

TO:	Mike Mattos Affordable Housing and Services Collaborative, Inc.
FROM:	Jeffrey Santacruce, PE, PTOE - Project Manager
DATE:	January 12th, 2023 **REVISED DATE:** March 10th, 2023
SUBJECT:	Proposed Development of Affordable Housing Property– Foxboro, MA – Traffic Impact Assessment

COMMONWEALTH OF MASSACHUSETTS
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INTRODUCTION

Weston & Sampson has prepared this report for a proposed affordable housing development on a parcel of land that is in the town of Foxborough, Massachusetts. The site is an approximately 16-acre parcel of undeveloped wooded land bounded by Walnut Street to the north, Commercial Street (MA Route 140) to the east, Interstate 95 ramps to the south, and residential homes along North High Street to the west. The proposed project involves the construction of multiple buildings consisting of 200 senior adult dwelling units. This study has been prepared to summarize the existing and future conditions of all roadway segments and intersections, within the study area as shown in Figure 1.

Access to the proposed development is proposed via a new full access/egress driveway approximately 400 feet west of the intersection of Walnut Street and Commercial Street. In addition, the site will have a gated emergency access driveway approximately 230 feet west of the main driveway along Walnut Street. An evaluation of the traffic impacts associated with the proposed project requires an evaluation of the existing and projected traffic volumes, the volume of traffic to be generated by the project, and the traffic operations and safety analysis of the study area. In addition, the work includes the quantitative traffic analysis of two intersections during the weekday AM peak hour, and weekday PM peak hour for the anticipated opening year of 2026, and the future 2033 design year conditions as outlined below. In addition, there is a MassDOT project being design by TEC for the intersection of Walnut Street and Route 140 (Commercial Street) that we reviewed for future traffic conditions and geometry. Sections of the TEC Report and Plans can be found in the Appendix. Figure 1 shows the site in relation to the surrounding area and roadway system.

EXISTING CONDITIONS

Evaluation of the existing and future traffic conditions within the study area requires an understanding of the existing transportation system. Data such as roadway geometrics and peak hour traffic volumes provide the basis for a thorough understanding of existing conditions and the requisite data necessary to provide projections of future traffic conditions. Before the effects of any future alternative can be evaluated relative to the study criteria, the first major step is to understand the study area as it exists today.

Study Area

Descriptions of the existing physical conditions within the study area are presented in the following narratives.

Figure 1
Site Location Map

Roadway

Walnut Street: Walnut Street is an urban major collector roadway, under the jurisdiction of the Town of Foxborough. Walnut Street runs in a generally east-west direction. Walnut Street within the study area consists of one travel lane approximately 12 feet in width in each direction with no shoulder delineation. Directional flow along the roadway is separated by a double yellow line, and there are no white edge lines. There are painted stop bars and "Stop" signs on both approaches. The posted speed limit along the roadway in the study area is 30 miles per hour (mph). There are no formal bicycle accommodations sidewalks along the roadway in the vicinity of the site.

Commercial Street (MA Route 140): Commercial Street is a minor arterial roadway, under the jurisdiction of MassDOT. Commercial Street runs in a generally north-south direction. Commercial Street within the study area consists of two 12-foot-wide travel lanes in each direction with 1-foot-wide shoulders south of the Walnut Street intersection and one 12-foot-wide travel lane in each direction with variable width (6-10 feet) shoulders north of the Walnut Street intersection. Traffic along Commercial Street is separated by a raised median within the project study area. The posted speed

limit along the roadway in the study area is 55 miles per hour. There are no bicycle or pedestrian accommodations along the roadway within the study area.

North High Street: North High Street is a local roadway under the jurisdiction of the town of Foxborough. North High Street runs in a generally north-south direction. The southern section of North High Street is a Dead End. North High Street within the study area consists of one 12 to 14-foot-wide travel lane in each direction with no delineated shoulders. Traffic along North High Street is separated by a double yellow centerline that is significantly faded. There are painted stop bars and "Stop" signs on both approaches.

Intersections

Walnut Street and Commercial Street (MA Route 140): Walnut Street and Commercial Street in Foxborough meet to form a four-legged unsignalized intersection. Walnut Street is under stop sign control on both the east and westbound approaches. The Commercial Street northbound approach generally consists of two 12-foot-wide travel lanes with one lane dropping after the intersection and a an 11-foot-wide exclusive left turn lane. The Commercial Street southbound approach consist of one 19-foot travel lane that opens to two 12-foot-wide travel lanes on the far side of the intersection. Traffic along Commercial Street is separated by a raised median on both approaches to the intersection. The walnut Street eastbound approach consist of one 12-foot width shared through/left-turn lane and a channelized slip ramp for right turns. The Walnut Street westbound approach consists of one 16-foot-wide travel lane. There are not sidewalks or crosswalks on either roadway in the vicinity of the intersection.

Walnut Street and North High Street: Walnut Street and North High Street in Foxborough meet to form a four-legged unsignalized all-way "Stop" controlled intersection. The North High Street approaches consists of one travel lane that varies in width between 12 – 13.75 feet. The Walnut Street approaches consists of one travel lane that varies in width between 11 and 13.75 feet. There are no formal bicycle accommodations, or crosswalks on either roadway in the vicinity of the intersection. There is a sidewalk with a grass buffer on the south abound North High Street approach to the intersection of. There are stop signs and stop bars on both roadways at the intersection.

TRAFFIC VOLUMES

Turning Movement Counts (TMC) were performed at two intersections within the study area during the weekday AM peak hours (6:00AM-9:00AM) and weekday PM peak hours and (3:00PM-6:00PM) on Wednesday, June 1st, 2022. including:

- North High Street and Walnut Street
- Walnut Street and Commercial Street

Data collection included traffic volumes, pedestrian volumes, bicycle volumes, and vehicle classifications. Based on the vehicle classification data, heavy vehicles represent between 0.4% and 3.6% of the total daily traffic within the study area. Existing 2022 traffic volumes are shown in Figure 2.

In addition, 24-hour Automatic Traffic Recorder (ATR) data collection was performed at one location westbound of Walnut Street from Commercial Street on Wednesday, June 1st, and Thursday June 2nd. ATR Data collected included vehicle speeds and traffic volumes in each direction along Walnut Street west of Commercial Street. All count data is provided in the Appendix.

SEASONAL TRAFFIC ADJUSTMENT

Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. Based on the type of roadway (U4-U7) the data provided in the 2019 MassDOT Weekday Seasonal and Axle Correction Factor, was reviewed to determine if any adjustments for seasonal variations were required. It was determined that traffic volumes in the month of June are 14 percent higher (Factor of 0.86 in 2019 of the average month) than average-month conditions. Therefore, the June 2022 traffic volumes were left unadjusted to reflect a conservative (worst case) analysis condition. The compiled seasonal adjustment data is provided in the Appendix.

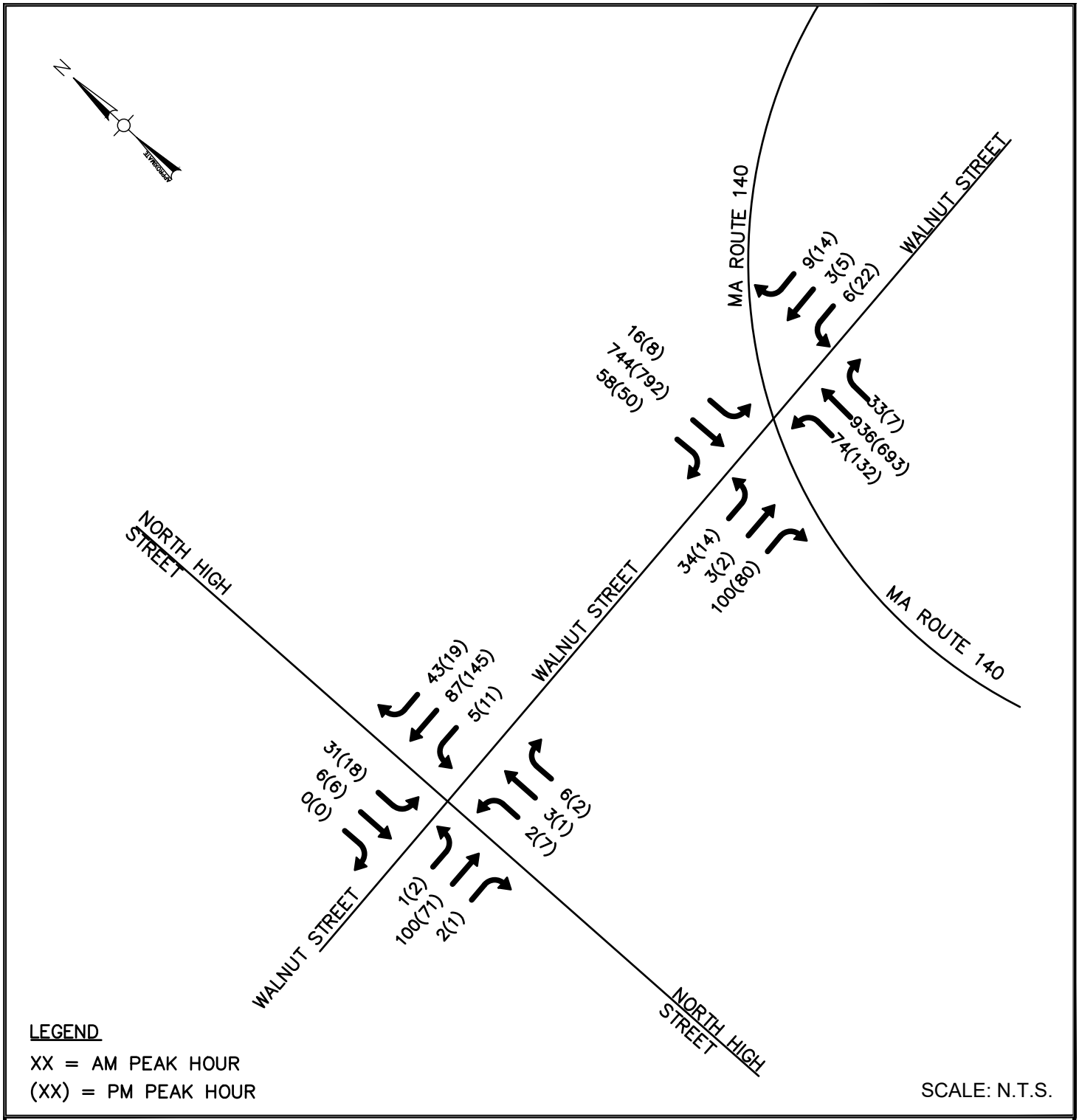

FIGURE 2

2022 EXISTING PEAK HOUR TRAFFIC VOLUMES

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

Weston & Sampson℠

VEHICLE SPEEDS

Speed measurements were conducted within the study area as part of the ATR on Wednesday, June 1, 2022. The observed speeds are summarized in Table 1 and the speed data is provided in the Appendix.

As shown below, the 85th percentile speed was found to be slightly higher than the posted speed on Walnut Street in the vicinity of the proposed site.

Table 1 – Observed Travel Speeds (in Miles Per Hour)

Location/ Direction	Posted Speed Limit (MPH)	Median Speed (MPH)	85th Percentile Speed (MPH)
Walnut Street			
Eastbound	35	34.9	39
Westbound	35	32.7	37

SAFETY

Crash Summary

Crash data for the study area in the Town of Foxborough for the three most recent years, January 2017 through December 2019, was obtained from the MassDOT online Crash Portal. A review of the MassDOT crash data revealed that there were 88 crashes that occurred along Commercial Street, Walnut Street and North High Street. 75 crashes along commercial street, 2 crashes along North High Street, and 4 crashes along Walnut Street. The intersection of Commercial Street and Walnut Street had a total of 7 crashes and the intersection of Walnut Street and North High Street had no crashes. Crashes include angle, rear-end, head-on, sideswipe, and single vehicle collision. No fatalities were reported. More crashes occurred during the day and with dry road surface conditions, therefore time of day and road surface conditions might not be limiting factors. Table 2 provides a summary of the crash history.

Intersection crash rate for both intersections of Commercial Street and Walnut Street and Walnut Street and North High Street were analyzed. Commercial Street and Walnut Street had a crash rate of 0.28 and North High Street and Walnut Street had a crash rate of 0.00. This is below the Massachusetts District 4 average for unsignalized intersections of 0.57 and the Massachusetts Statewide crash rate for unsignalized intersections of 0.57. All crash data is included in the Appendix.

Table 2 – Crash Summary

Location		Commercial St	Commercial St / Walnut St	North High St	Walnut St
Number of Crashes	Total	75	7	2	4
	Average Per Year	15	1.4	0.4	0.8
Severity	Non-Fatal Injury	20	1	1	1
	Property Damage	54	5	1	3
	Unknown	1	1	0	0
Road Surface Condition	Dry	64	6	1	3
	Wet	11	1	1	1
	Unknown	1	0	0	0
Time of Day	Day	59	4	2	4
	Night	16	3	0	0
Type of Collision	Angle	23	4	0	0
	Head-on / Rear- End	25	0	1	0
	Sideswipe	12	2		1
	Single vehicle crash	14	1	1	3
	Unknown	1	0	0	0

Source: MassDOT Crash Website

Sight Distance

To identify potential safety concerns associated with site egress, sight distances have been evaluated at the site driveway location to determine if the available sight distances for vehicles entering/exiting the site meet or exceed the minimum distances required for approaching vehicles along Water Street to safely stop. The available sight distances were compared with minimum requirements, as established by the American Association of State Highway and Transportation Officials (AASHTO)[1].

Stopping Sight Distance (SSD) is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in the road. The values are based on a driver perception and reaction time of 2.5 seconds and a braking distance calculated for wet, level pavements. When the roadway is either on an upgrade or downgrade, grade correction factors are applied. Stopping sight distance is measured from a driver's eye height of 3.5 feet to an object height of 2 feet above street level.

Intersection sight distance (ISD) is the minimum distance required for a motorist exiting a minor street to turn onto the major street, without being overtaken by an approaching vehicle reducing its speed from the design speed to 70 percent of the design speed. Intersection sight distance is measured from a driver's eye height of 3.5 feet to an object height of 3.5 feet above street level.

SSD is generally more important as it represents the minimum distance required for safe stopping while ISD is based only upon acceptable speed reductions to the approaching traffic stream. However, the ISD must be equal to or greater than the minimum required SSD in order to provide safe operations at the intersection. The available SSD and ISD at the proposed site drive location was measured and compared to minimum requirements as established by AASHTO as shown in Table 3.

As indicated in Table 3, the available sight distance at the proposed site driveway currently meets the minimum required SSD and ISD requirements although it is currently limited by vegetation which will be cleared during construction. The area to be cleared is shown in the appendix.

Table 3 – Sight Distance

	Stopping Sight Distance (feet)			Intersection Sight Distance (feet)			
Location/Direction	Measured	Minimum Required[a]	Desirable[b]	Measured	Minimum Required[c]	Desirable (Posted)[a]	Desirable[b]
Proposed Driveway							
West of driveway	425	250	305	450	250	390	445
East of driveway	395	250	305	395[d]	250	335	385

[a] Values based on AASHTO requirements for posted speed limit of 35 mph on Walnut Street.
[b] Values based on AASHTO requirements for observed speeds for Walnut Street as shown in Table 1.
[c] Values based on minimum SSD requirements.
[d] The sight distance to the west of the driveway is limited by the intersection of Walnut Street and Commercial Street

[1] "*A Policy on the Geometric Design of Highways and Street*" American Association of State Highway Officials (AASHTO), Washington, DC 2018

TRAFFIC GROWTH

For analysis purposes, the year 2026 was considered the open year and the year 2033 (a seven-year planning horizon) was chosen as the future Design Year and was used to analyze future traffic conditions within the study area. The impacts of the project may then be determined by making a comparison between the No-Build and Build conditions. Under all alternatives, traffic increases consist of a combination of general background annual growth or specific developments within the study area applied to existing traffic volumes.

Based on conversations with the town, and a Functional Design Report (FDR) was prepared by TEC in June 11th 2021 for Commercial Street and Walnut Street intersection, the town agreed that a growth rate of 1.8 percent can be used for consistency with the FDR prepared by TEC. This background growth rate was used in generating the future No-Build peak hour traffic-flow networks for 2026 and 2033 conditions as shown in Figure 3 and 4. The conversations with the town, and the Functional Design Report (FDR) prepared by TEC in June 11th 2021 is attached to the appendix.

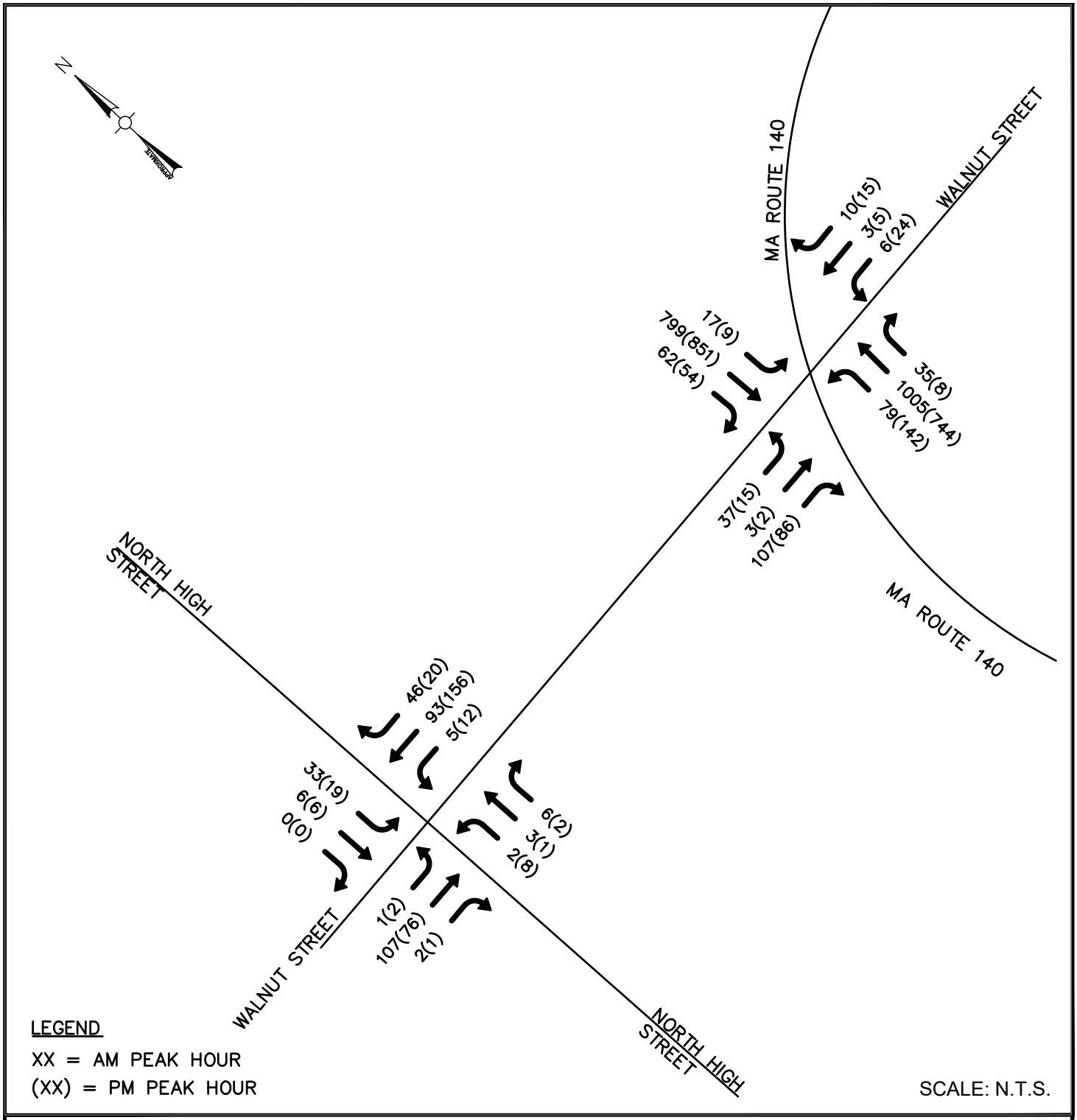

FIGURE 3

2026 NO BUILD
PEAK HOUR TRAFFIC VOLUMES

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

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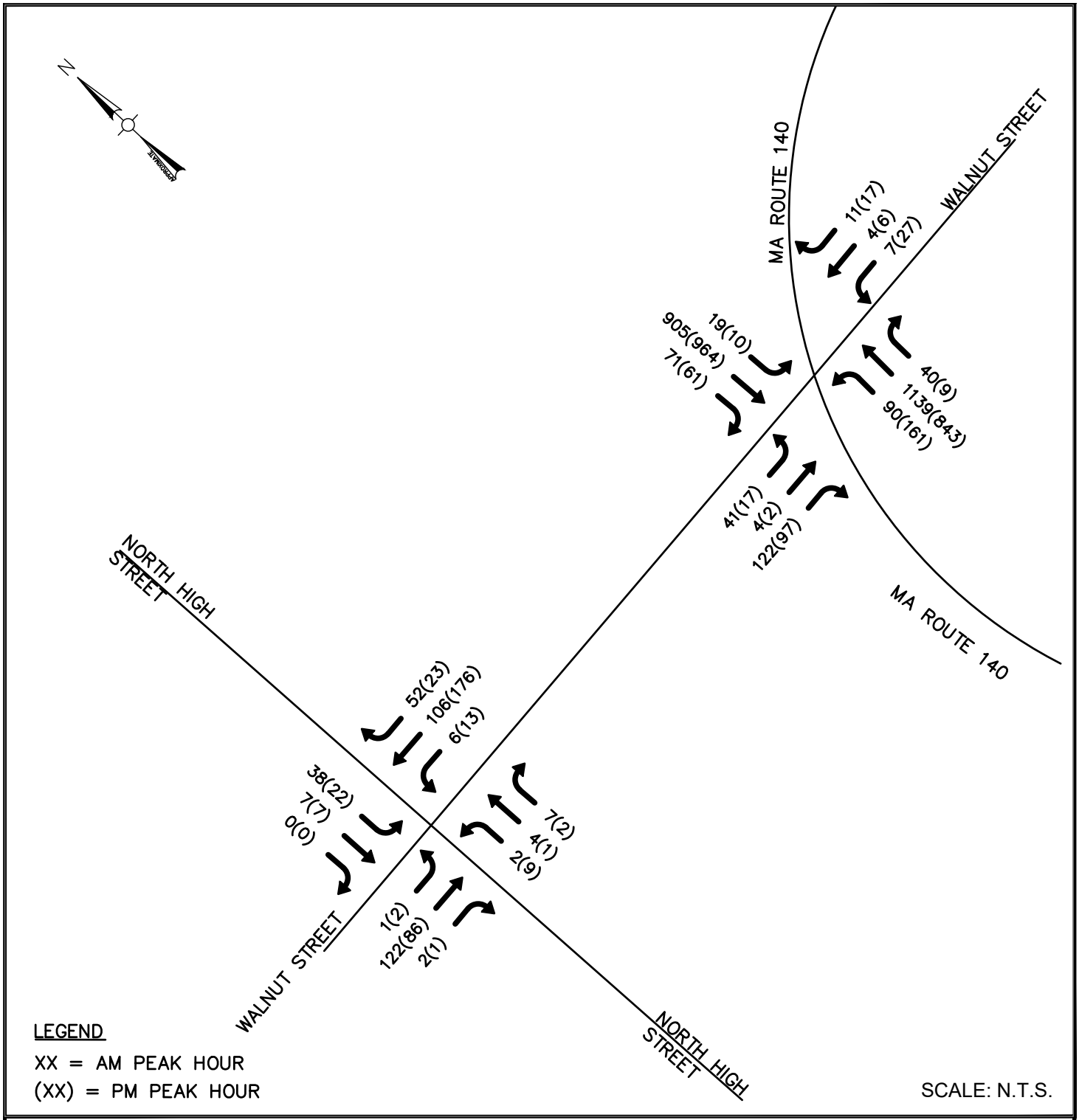

FIGURE 4

2033 NO BUILD
PEAK HOUR TRAFFIC VOLUMES

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

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TRIP GENERATION

Traffic to be generated by a proposed project is typically generated by rates provided in the Institute of Transportation Engineers *Trip Generation*[2] manual. Research of the ITE Trip Generation manual determined that land use code 252-Senior Adult housing – multifamily was appropriate. The trip generation data are summarized in Table 4 below.

Therefore, it is anticipated that the proposed site would generate approximately 46 trips (21 trips entering and 25 exiting) during the AM peak hour and 59 trips (32 trips entering and 27 trips exiting) during the PM peak hour. The results of the trip generation for the proposed facility are shown below in Table 4. The proposed site trip generation rates shown in Table 4 were applied to the study area roadways based on the trip distribution values noted below. A copy of the trip generation calculations is included in the Appendix.

Table 4 - Trip Generation

Site Driveway	Proposed Trips LUC 252 – Senior Adult Housing
Daily	603
AM Peak Hour	
In	21
Out	25
Total	46
PM Peak Hour	
In	32
Out	27
Total	59

TRIP DISTRIBUTION

The distribution of the proposed new site traffic on the area roadways and intersections is based on the existing travel patterns observed at the area roadways. The trip generation and trip distribution figures across the network for this project is shown Figure 5 and Figure 6 below.

Build Conditions

Based on trip generation and distribution estimates for this project, the additional traffic volumes from the proposed project were assigned to the site driveway and study area intersections. The 2026 and 2033 Build weekday AM, and PM peak hour traffic-flow network are depicted in Figure 7 & 8, respectively.

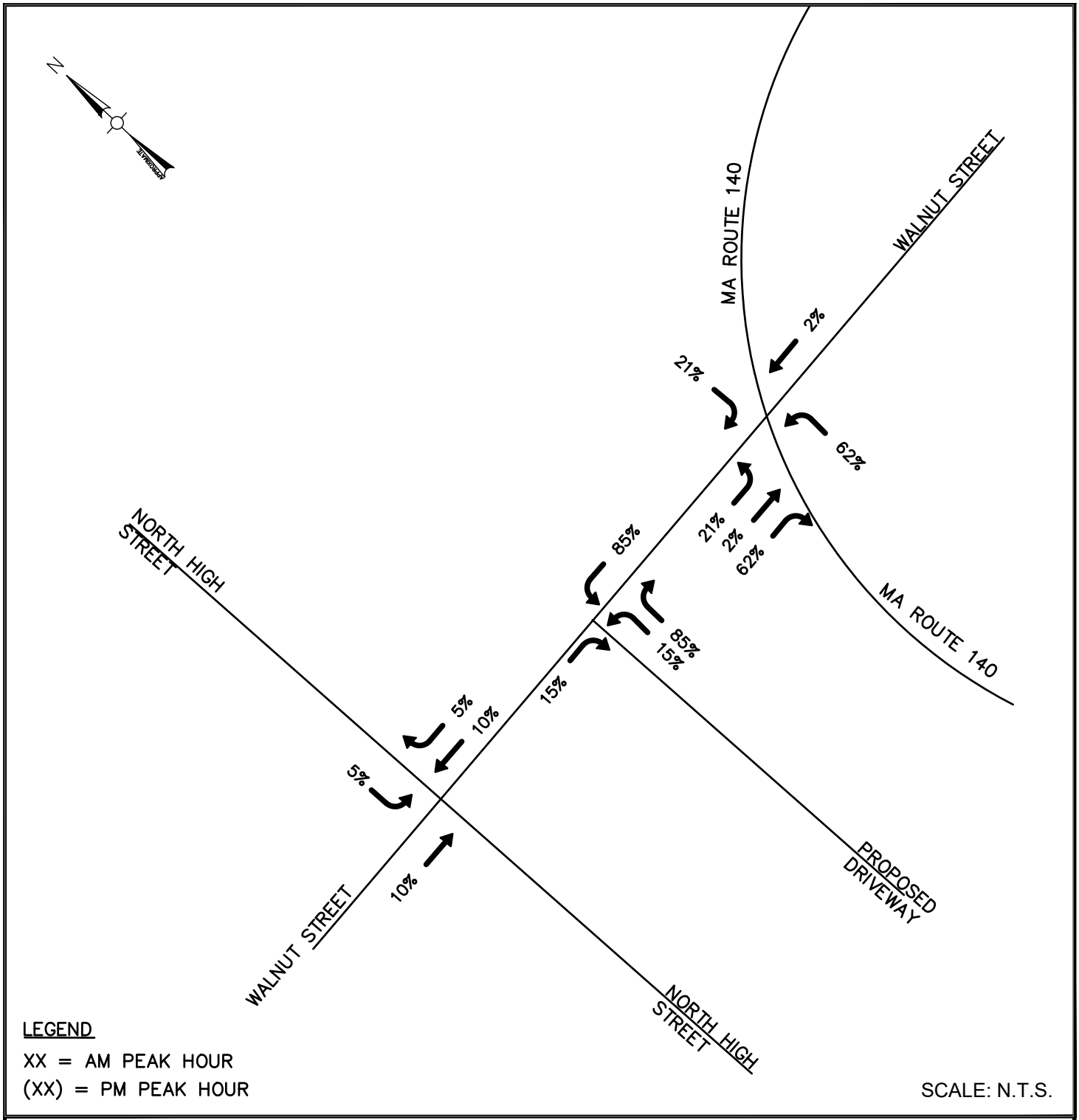

FIGURE 5

TRIP DISTRIBUTION

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

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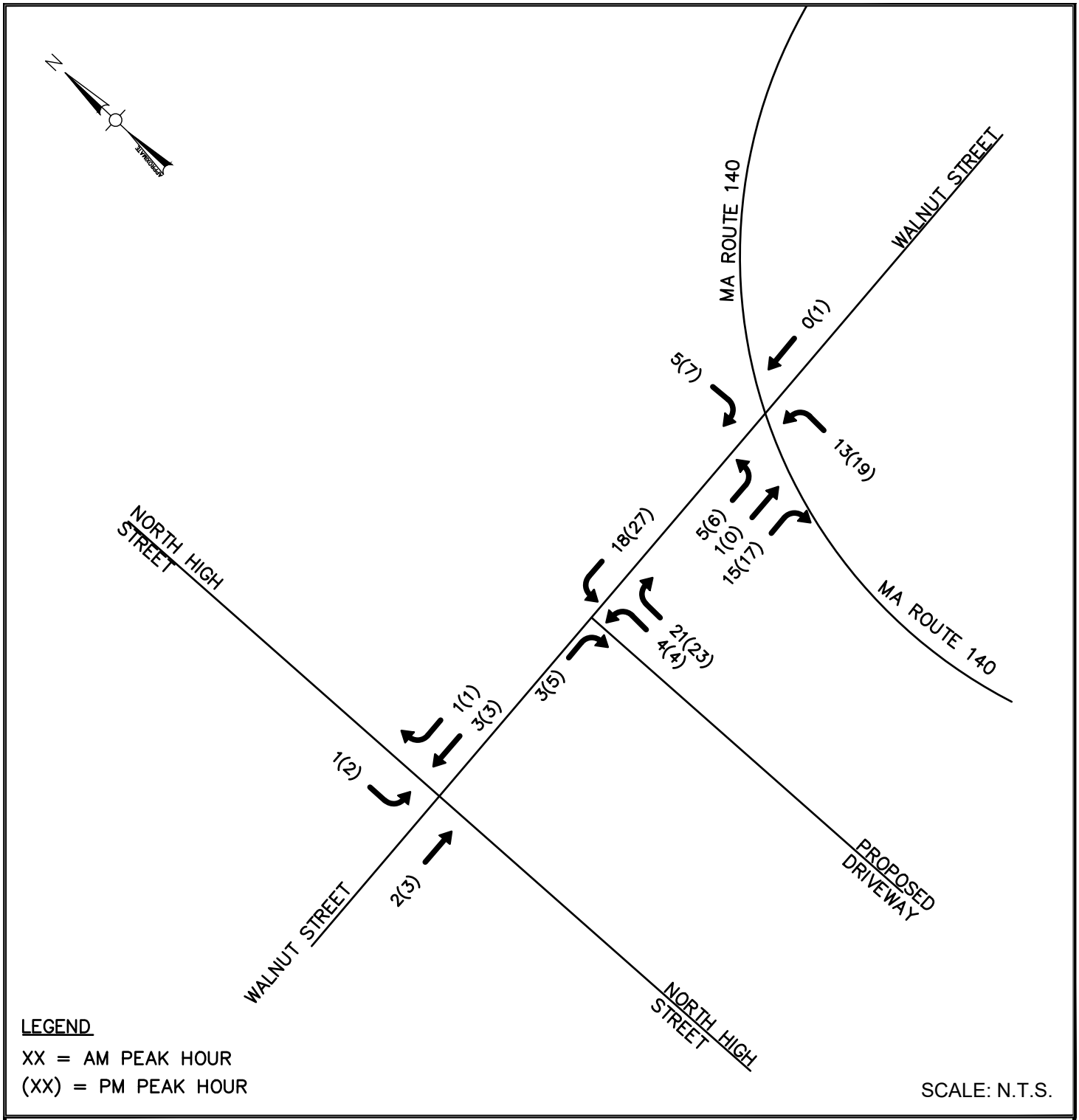

FIGURE 6

TRIP GENERATION

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

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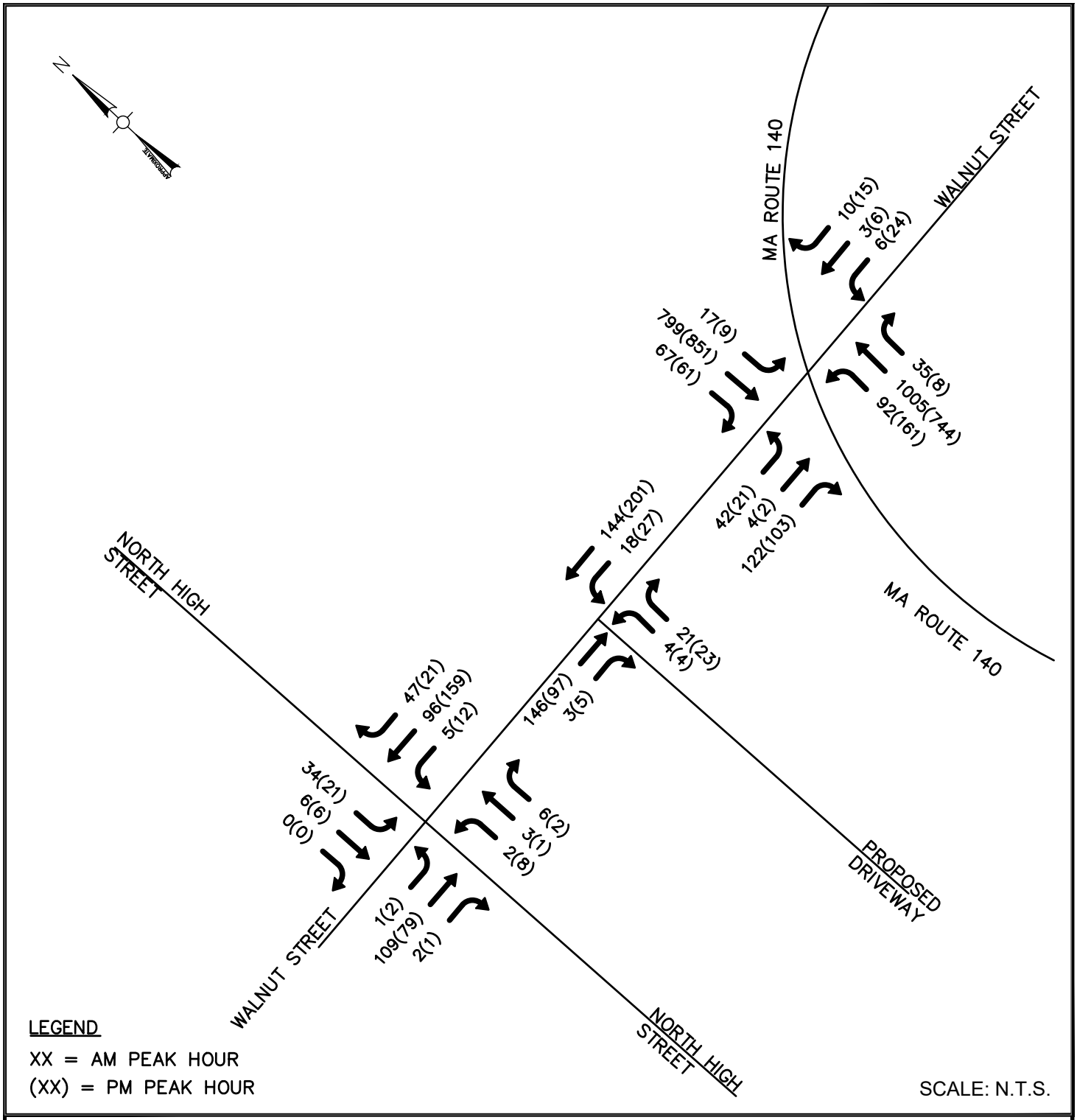

FIGURE 7

2026 BUILD
PEAK HOUR TRAFFIC VOLUMES

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

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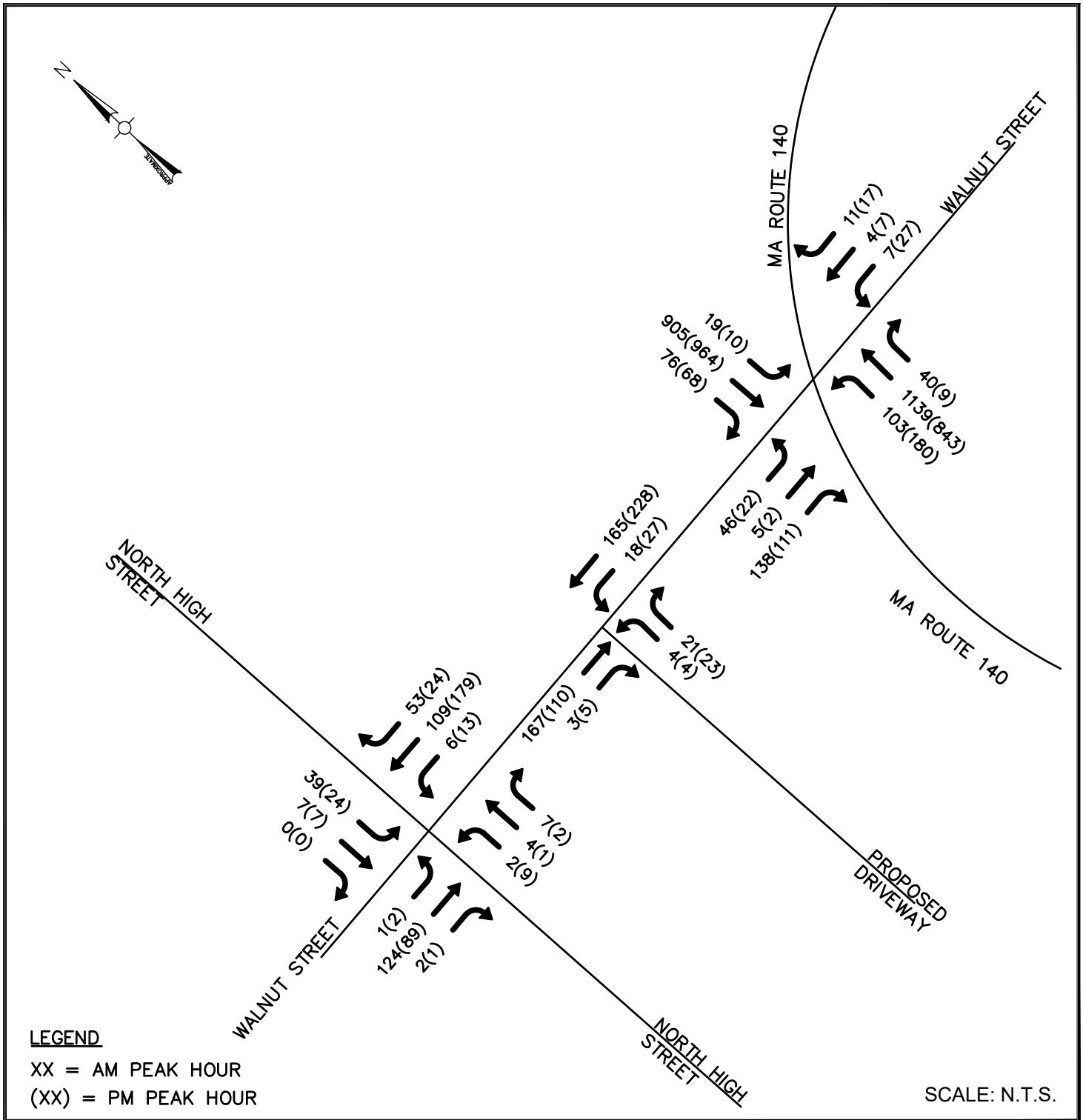

FIGURE 8

2033 BUILD
PEAK HOUR TRAFFIC VOLUMES

FOXBOROUGH HOUSING DEVELOPMENT, WALNUT STREET

FOXBOROUGH, MA

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CAPACITY ANALYSIS METHODOLOGY

Capacity analysis is used to assign levels of service to traffic facilities under various traffic conditions. Operational analyses of the study intersections were completed using procedures in the Transportation Research Board's *Highway Capacity Manual, 2016 (HCM 6)*[3]. This is the nationally accepted methodology for the analysis of traffic conditions. The software program *Synchro 11* by TrafficWare (a nationally recognized computer software package for analyzing capacities, Levels of Service, and queueing in intersections) was used to perform the actual capacity and queue analyses.

INTERSECTION CAPACITY – UNSIGNALIZED INTERSECTIONS

Level of service (LOS) is a term used to characterize the operational conditions of a traffic facility and their perception by motorist and/or passengers at a particular point in time. Numerous factors contribute to a facility's LOS index including travel delay and speed, congestion, driver discomfort, convenience, and safety based on a comparison of the facility's capacity to the facility's demand.

For two-way stop controlled unsignalized intersections, the LOS is evaluated for the minor street approach(es) and for the left-turns from the major street. The major street through and right turning traffic is assumed to have no delay since the movement is free flow with no traffic control. At all-way stop controlled intersections, LOS is reported similar to signalized intersections, that is, for the intersection, as well as for each approach and individual movements. The LOS associated with different control delay times for unsignalized intersections, as defined by the HCM, is shown in Table 5 below. LOS are letter grades with LOS A being the best and LOS F being the worst, quantified by average control delay. Control delay includes the amount of time a driver experiences being stopped at the intersection, as well as start-up lost time and time moving up in the queue at the intersection.

Table 5 – Unsignalized Intersection Level of Service Criteria

Level of Service (LOS)	Control Delay Times (sec/veh)
A	< 10
B	> 10 and < 15
C	> 15 and < 25
D	> 25 and < 35
E	> 35 and < 50
F	> 50

Having inadequate Levels of Service for minor street approaches to unsignalized intersections is not uncommon, as the major street traffic flow is continuous. When the volume to capacity ratio (v/c) is equal to or greater than 1.0, LOS is also considered F.

INTERSECTION CAPACITY – SIGNALIZED INTERSECTIONS

The operating LOS of a signalized intersection is based on the average control delay per vehicle. The control delay per vehicle is estimated for each lane group and combined for each approach and the intersection as a whole. The LOS associated with different control delay times for signalized intersections, as defined by the HCM, is shown in Table 6 below.

[3] *Highway Capacity Manual, 6th Edition*, Transportation Research Board, Washington, DC, 2016.

Table 6 – Signalized Intersection Level of Service Criteria

Level of Service	Control Delay Times (sec/veh)
A	< 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

CAPACITY ANALYSIS RESULTS

Level-of-Service (LOS) and queue analyses were conducted for the intersection of Commercial Street and Walnut Street, Walnut Street and North High Street and the proposed intersection of the Site Driveway and Walnut Street under 2026 & 2033 No-Build and Build conditions. We also considered 2033 No-Build and Build conditions with the proposed geometric layout and signal design recommended in the FDR Report by TEC revised on June 11, 2021. The capacity analysis methodology is based on concepts and procedures in the Highway Capacity Manual (HMC 6) and as described above.

Intersection of Commercial Street and Walnut Street

The intersection of Commercial Street and Walnut Street for 2026 and 2033 analysis using the existing geometry has an intersection LOS of F with significant queues on the eastbound and westbound lane as shown in table 7 and 8. A comparison was also done with the proposed improvements found in the functional design report prepared by TEC revised on June 11, 2021, for 2033 and the results are shown in table 8 where the LOS improves to a D, and the longest queue length is 375ft.

Intersection of Walnut Street and the Proposed Driveway

The intersection of Walnut Street and the proposed driveway show a level of service A for both 2026 and 2033 build analysis and a maximum queue length of 25ft as shown in table 7 and 8.

Intersection of Walnut Street and North High Street

The intersection of Walnut Street and North High Street show LOS of A across all the approaches for both 2026 and 2033 Build and No-build analysis. The queue length on the westbound lane during Build PM Peak Hour and Build PM Peak Hour with the Improvements and signals recommended by TEC had a queue length of an additional 25ft. The summary of the analysis results is shown in table 7 and 8.

Overall, the increased volume of site generated traffic as a result of the proposed facility will have an impact on the operations of the intersections as evident by the minimal in delay.

Table 7 - Analysis Results 2026 Conditions

	2026 No-Build				2026 Build			
Intersection/Lane Group	v/c[a]	Delay[b]	LOS[c]	Queue[d]	v/c[a]	Delay[b]	LOS[c]	Queue[d]
AM Peak								
Commercial Street and Walnut Street								
Northbound left	0.14	11.3	B	25	0.17	11.5	B	25
Eastbound Left and Through	1.38	459	F	150	1.73	621	F	175
Eastbound Right	0.44	26.5	D	75	0.50	29	D	75
Southbound Left	0.04	11.8	B	25	0.04	11.8	B	25
Westbound Lane	1.21	564.4	F	100	1.43	719.7	F	100
Proposed Driveway and Walnut Street								
Northbound Lane	-	-	-	-	0.03	9.5	A	25
Westbound Lane	-	-	-	-	0.01	7.6	A	0
North High Street and Walnut Street								
Northbound Lane	0.02	7.4	A	25	0.02	7.4	A	25
Eastbound Lane	0.18	8.2	A	25	0.18	8.2	A	25
Westbound Lane	0.22	8.2	A	25	0.23	8.2	A	25
Southbound Lane	0.07	8.3	A	25	0.07	8.3	A	25

[a]Volume to capacity ratio
[b]Average Control Delay in seconds per vehicle
[c]Level-of-Service
[d]95th percentile queue

Table 7 - Analysis Results 2026 Conditions (Continued)

	2026 No-Build				2026 Build			
Intersection/Lane Group	v/c[a]	Delay[b]	LOS[c]	Queue[d]	v/c[a]	Delay[b]	LOS[c]	Queue[d]
PM Peak								
Commercial Street and Walnut Street								
Northbound left	0.20	11.2	B	25	0.25	11.9	B	25
Eastbound Left and Through	0.32	98.9	F	50	0.63	190.7	F	75
Eastbound Right	0.27	19.9	C	50	0.36	22.9	C	50
Southbound Left	0.01	9.4	A	0	0.01	9.5	A	0
Westbound Lane	1.24	395	F	125	1.96	780.3	F	150
Proposed Driveway and Walnut Street								
Northbound Lane	-	-	-	-	0.03	9.3	A	25
Westbound Lane	-	-	-	-	0.02	7.5	A	25
North High Street and Walnut Street								
Northbound Lane	0.02	7.6	A	0	0.02	7.7	A	0
Eastbound Lane	0.10	7.7	A	25	0.11	7.7	A	25
Westbound Lane	0.23	8.3	A	25	0.24	8.3	A	25
Southbound Lane	0.04	8.0	A	25	0.04	8.0	A	25

[a]Volume to capacity ratio
[b]Average Control Delay in seconds per vehicle
[c]Level-of-Service
[d]95th percentile queue

Table 8 - Analysis Results 2033 Conditions

	2033 No-Build				2033 Build					2033 Build + Signal			
Intersection/Lane Group	v/c[a]	Delay[b]	LOS[c]	Queue[d]	v/c[a]	Delay[b]	LOS[c]	Queue[d]	v/c[a]	Delay[b]	LOS[c]	Queue[d]	Queue[e]
AM Peak													
Commercial Street and Walnut Street													
Northbound Left	0.18	12.4	B	25	0.21	12.7	B	25	0.51	39.0	D	100	100
Northbound Thru/Right	-	-	-	-	-	-	-	-	0.64	13.9	B	375	150
Eastbound Left/ Thru	3.19	1449	F	200	4.10	1905	F	225	0.84	44.1	D	150	50
Eastbound Right	0.60	39.2	E	100	0.68	46	E	125					
Southbound Left	0.05	12.9	B	25	0.05	12.9	B	25	0.21	40.9	D	50	25
Southbound Thru/Right	-	-	-	-	-	-	-	-	0.59	19.3	B	350	200
Westbound Lane	4.42	2709	F	125	8.84	5775	F	125	0.25	30.5	C	100	25
Proposed Driveway and Walnut Street													
Northbound Lane	-	-	-	-	0.03	9.7	A	25	0.03	9.7	A	25	-
Westbound Lane	-	-	-	-	0.01	7.6	A	0	0.01	7.6	A	0	-
North High Street and Walnut Street													
Northbound Lane	0.02	7.5	A	25	0.02	7.5	A	25	0.02	7.5	A	25	-
Eastbound Lane	0.20	8.5	A	25	0.21	8.5	A	25	0.21	8.5	A	25	-
Westbound Lane	0.25	8.5	A	25	0.26	8.6	A	25	0.26	8.6	A	25	-
Southbound Lane	0.09	8.5	A	25	0.09	8.5	A	25	0.09	8.5	A	25	-

[a]Volume to capacity ratio [b]Average Control Delay in seconds per vehicle [c]Level-of-Service [d]95th percentile queue [e]50th percentile queue

Table 8 - Analysis Results 2033 Conditions (Continued)

	2033 No-Build				2033 Build				2033 Build + Signal				
Intersection/Lane Group	v/c[a]	Delay[b]	LOS[c]	Queue[d]	v/c[a]	Delay[b]	LOS[c]	Queue[d]	v/c[a]	Delay[b]	LOS[c]	Queue[d]	Queue[e]
PM Peak													
Commercial Street and Walnut Street													
Northbound Left	0.28	13	B	50	0.32	13.5	B	50	0.77	50	D	200	100
Northbound Thru/Right	-	-	-	-	-	-	-	-	0.42	10.8	B	225	125
Eastbound Left/ Thru	0.77	306	F	75	1.24	545.3	F	100	0.52	16	B	75	25
Eastbound Right	0.40	27.4	D	50	0.46	30	D	75					
Southbound Left	0.02	10	A	0	0.02	10	A	0	0.08	28.8	C	25	25
Southbound Thru/Right	-	-	-	-	-	-	-	-	0.66	20.7	C	350	225
Westbound Lane	3.62	1695	F	200	4.62	2254	F	200	0.40	30.7	C	50	25
Proposed Driveway and Walnut Street													
Northbound Lane	-	-	-	-	0.04	9.4	A	25	0.04	9.4	A	25	-
Westbound Lane	-	-	-	-	0.02	7.5	A	25	0.02	7.5	A	25	-
North High Street and Walnut Street													
Northbound Lane	0.02	7.8	A	25	0.02	7.8	A	25	0.02	7.8	A	25	-
Eastbound Lane	0.12	7.8	A	25	0.12	7.8	A	25	0.12	7.8	A	25	-
Westbound Lane	0.26	8.5	A	25	0.27	8.6	A	50	0.27	8.6	A	50	-
Southbound Lane	0.04	8.1	A	25	0.05	8.1	A	25	0.05	8.1	A	25	-

[a]Volume to capacity ratio [b]Average Control Delay in seconds per vehicle [c]Level-of-Service [d]95th percentile queue

CONCLUSION

- The traffic volume “net” increases as a result of the proposed development will have an impact on the operations of the existing intersections within the study area.
- There is sufficient sight distance at the proposed site driveways so safe operations can be expected.
- The operations of the intersection of Walnut Street at Commercial Street with or without this project will experience significant delays and poor LOS under future conditions.
- With the installation of the proposed traffic signal at the intersection of Walnut Street and Commercial Street as part of the future MassDOT project the operations of the intersection will improve greatly.

APPENDIX

TURNING MOVEMENT COUNT

AUTOMATIC TRAFFIC RECORDER (ATR)

SEASONAL ADJUSTMENT FACTOR

TRAFFIC GROWTH DATA

CRASH DATA

INTERSECTION CRASH RATE

TRIP GENERATION

TEC FUNCTIONAL DESIGN REPORT

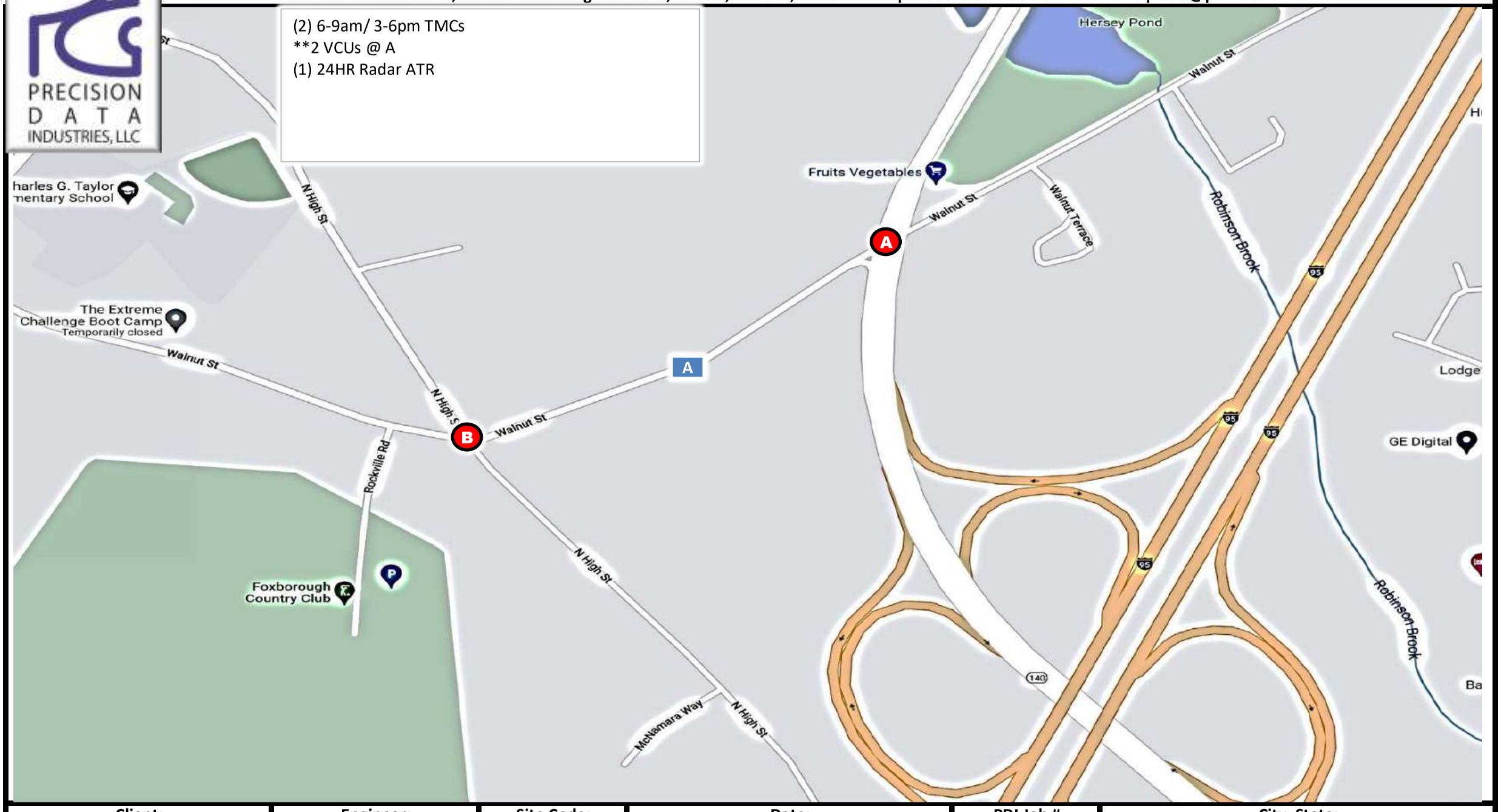
LEVEL OF SERVICE ANALYSIS

TURNING MOVEMENT COUNT (TMC)

Location Map: 228636 Foxborough, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datarequests@pdillc.com

(2) 6-9am/ 3-6pm TMCs
**2 VCUs @ A
(1) 24HR Radar ATR



Client:	Engineer:	Site Code:	Date:	PDI Job #	City, State:
Weston & Sampson	J. Santacruce	ENG22-0467	Wed 6/1/2022	228636	Foxborough, MA

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	56	0	0	56	0	0	0	0	0	2	55	2	0	59	11	0	3	0	14	129
6:15 AM	2	65	1	0	68	0	0	0	0	0	2	101	4	0	107	10	0	4	0	14	189
6:30 AM	1	82	2	0	85	0	0	0	0	0	3	130	5	0	138	14	1	6	0	21	244
6:45 AM	5	89	3	0	97	0	0	3	0	3	6	150	17	0	173	17	1	8	0	26	299
Total	8	292	6	0	306	0	0	3	0	3	13	436	28	0	477	52	2	21	0	75	861
7:00 AM	2	88	0	0	90	0	0	1	0	1	9	199	17	0	225	19	1	6	0	26	342
7:15 AM	13	196	3	0	212	1	1	1	0	3	10	282	25	0	317	31	1	12	0	44	576
7:30 AM	25	243	1	0	269	2	0	2	0	4	7	277	18	0	302	24	0	11	0	35	610
7:45 AM	12	170	4	0	186	3	2	2	0	7	11	212	14	0	237	25	1	6	0	32	462
Total	52	697	8	0	757	6	3	6	0	15	37	970	74	0	1081	99	3	35	0	137	1990
8:00 AM	8	135	8	0	151	3	0	1	0	4	5	165	17	0	187	20	1	5	0	26	368
8:15 AM	10	135	6	0	151	3	0	6	0	9	12	145	22	0	179	15	3	4	0	22	361
8:30 AM	3	125	1	0	129	4	0	3	0	7	4	127	13	1	145	22	1	3	0	26	307
8:45 AM	6	109	4	0	119	5	2	5	0	12	14	168	22	0	204	16	1	11	0	28	363
Total	27	504	19	0	550	15	2	15	0	32	35	605	74	1	715	73	6	23	0	102	1399
Grand Total	87	1493	33	0	1613	21	5	24	0	50	85	2011	176	1	2273	224	11	79	0	314	4250
Approach %	5.4	92.6	2.0	0.0		42.0	10.0	48.0	0.0		3.7	88.5	7.7	0.0		71.3	3.5	25.2	0.0		
Total %	2.0	35.1	0.8	0.0	38.0	0.5	0.1	0.6	0.0	1.2	2.0	47.3	4.1	0.0	53.5	5.3	0.3	1.9	0.0	7.4	
Exiting Leg Total					2111					129					1742					268	4250
Cars	80	1399	31	0	1510	19	4	21	0	44	82	1937	171	1	2191	222	10	73	0	305	4050
% Cars	92.0	93.7	93.9	0.0	93.6	90.5	80.0	87.5	0.0	88.0	96.5	96.3	97.2	100.0	96.4	99.1	90.9	92.4	0.0	97.1	95.3
Exiting Leg Total					2029					123					1643					255	4050
Heavy Vehicles	7	94	2	0	103	2	1	3	0	6	3	74	5	0	82	2	1	6	0	9	200
% Heavy Vehicles	8.0	6.3	6.1	0.0	6.4	9.5	20.0	12.5	0.0	12.0	3.5	3.7	2.8	0.0	3.6	0.9	9.1	7.6	0.0	2.9	4.7
Exiting Leg Total					82					6					99					13	200

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:15 AM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	13	196	3	0	212	1	1	1	0	3	10	282	25	0	317	31	1	12	0	44	576
7:30 AM	25	243	1	0	269	2	0	2	0	4	7	277	18	0	302	24	0	11	0	35	610
7:45 AM	12	170	4	0	186	3	2	2	0	7	11	212	14	0	237	25	1	6	0	32	462
8:00 AM	8	135	8	0	151	3	0	1	0	4	5	165	17	0	187	20	1	5	0	26	368
Total Volume	58	744	16	0	818	9	3	6	0	18	33	936	74	0	1043	100	3	34	0	137	2016
% Approach Total	7.1	91.0	2.0	0.0		50.0	16.7	33.3	0.0		3.2	89.7	7.1	0.0		73.0	2.2	24.8	0.0		
PHF	0.580	0.765	0.500	0.000	0.760	0.750	0.375	0.750	0.000	0.643	0.750	0.830	0.740	0.000	0.823	0.806	0.750	0.708	0.000	0.778	0.826
Cars	54	708	16	0	778	8	2	6	0	16	31	912	71	0	1014	99	3	34	0	136	1944
Cars %	93.1	95.2	100.0	0.0	95.1	88.9	66.7	100.0	0.0	88.9	93.9	97.4	95.9	0.0	97.2	99.0	100.0	100.0	0.0	99.3	96.4
Heavy Vehicles	4	36	0	0	40	1	1	0	0	2	2	24	3	0	29	1	0	0	0	1	72
Heavy Vehicles %	6.9	4.8	0.0	0.0	4.9	11.1	33.3	0.0	0.0	11.1	6.1	2.6	4.1	0.0	2.8	1.0	0.0	0.0	0.0	0.7	3.6
Cars Enter Leg	54	708	16	0	778	8	2	6	0	16	31	912	71	0	1014	99	3	34	0	136	1944
Heavy Enter Leg	4	36	0	0	40	1	1	0	0	2	2	24	3	0	29	1	0	0	0	1	72
Total Entering Leg	58	744	16	0	818	9	3	6	0	18	33	936	74	0	1043	100	3	34	0	137	2016
Cars Exiting Leg					954					50					813					127	1944
Heavy Exiting Leg					25					2					37					8	72
Total Exiting Leg					979					52					850					135	2016

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	54	0	0	54	0	0	0	0	0	2	52	2	0	56	11	0	2	0	13	123
6:15 AM	1	60	1	0	62	0	0	0	0	0	2	91	4	0	97	10	0	3	0	13	172
6:30 AM	1	67	2	0	70	0	0	0	0	0	2	123	5	0	130	14	1	6	0	21	221
6:45 AM	4	76	2	0	82	0	0	1	0	1	6	147	17	0	170	17	1	8	0	26	279
Total	6	257	5	0	268	0	0	1	0	1	12	413	28	0	453	52	2	19	0	73	795
7:00 AM	2	86	0	0	88	0	0	1	0	1	9	188	16	0	213	18	1	6	0	25	327
7:15 AM	11	187	3	0	201	1	1	1	0	3	10	275	25	0	310	31	1	12	0	44	558
7:30 AM	24	239	1	0	264	2	0	2	0	4	6	273	17	0	296	24	0	11	0	35	599
7:45 AM	11	157	4	0	172	2	1	2	0	5	10	204	13	0	227	24	1	6	0	31	435
Total	48	669	8	0	725	5	2	6	0	13	35	940	71	0	1046	97	3	35	0	135	1919
8:00 AM	8	125	8	0	141	3	0	1	0	4	5	160	16	0	181	20	1	5	0	26	352
8:15 AM	9	126	5	0	140	2	0	5	0	7	12	139	21	0	172	15	2	4	0	21	340
8:30 AM	3	116	1	0	120	4	0	3	0	7	4	124	13	1	142	22	1	3	0	26	295
8:45 AM	6	106	4	0	116	5	2	5	0	12	14	161	22	0	197	16	1	7	0	24	349
Total	26	473	18	0	517	14	2	14	0	30	35	584	72	1	692	73	5	19	0	97	1336
Grand Total	80	1399	31	0	1510	19	4	21	0	44	82	1937	171	1	2191	222	10	73	0	305	4050
Approach %	5.3	92.6	2.1	0.0		43.2	9.1	47.7	0.0		3.7	88.4	7.8	0.0		72.8	3.3	23.9	0.0		
Total %	2.0	34.5	0.8	0.0	37.3	0.5	0.1	0.5	0.0	1.1	2.0	47.8	4.2	0.0	54.1	5.5	0.2	1.8	0.0	7.5	
Exiting Leg Total					2029					123					1643					255	4050

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:15 AM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	11	187	3	0	201	1	1	1	0	3	10	275	25	0	310	31	1	12	0	44	558
7:30 AM	24	239	1	0	264	2	0	2	0	4	6	273	17	0	296	24	0	11	0	35	599
7:45 AM	11	157	4	0	172	2	1	2	0	5	10	204	13	0	227	24	1	6	0	31	435
8:00 AM	8	125	8	0	141	3	0	1	0	4	5	160	16	0	181	20	1	5	0	26	352
Total Volume	54	708	16	0	778	8	2	6	0	16	31	912	71	0	1014	99	3	34	0	136	1944
% Approach Total	6.9	91.0	2.1	0.0		50.0	12.5	37.5	0.0		3.1	89.9	7.0	0.0		72.8	2.2	25.0	0.0		
PHF	0.563	0.741	0.500	0.000	0.737	0.667	0.500	0.750	0.000	0.800	0.775	0.829	0.710	0.000	0.818	0.798	0.750	0.708	0.000	0.773	0.811
Entering Leg	54	708	16	0	778	8	2	6	0	16	31	912	71	0	1014	99	3	34	0	136	1944
Exiting Leg					954					50					813					127	1944
Total					1732					66					1827					263	3888

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	6
6:15 AM	1	5	0	0	6	0	0	0	0	0	0	10	0	0	10	0	0	1	0	1	17
6:30 AM	0	15	0	0	15	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	23
6:45 AM	1	13	1	0	15	0	0	2	0	2	0	3	0	0	3	0	0	0	0	0	20
Total	2	35	1	0	38	0	0	2	0	2	1	23	0	0	24	0	0	2	0	2	66
7:00 AM	0	2	0	0	2	0	0	0	0	0	0	11	1	0	12	1	0	0	0	1	15
7:15 AM	2	9	0	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	18
7:30 AM	1	4	0	0	5	0	0	0	0	0	1	4	1	0	6	0	0	0	0	0	11
7:45 AM	1	13	0	0	14	1	1	0	0	2	1	8	1	0	10	1	0	0	0	1	27
Total	4	28	0	0	32	1	1	0	0	2	2	30	3	0	35	2	0	0	0	2	71
8:00 AM	0	10	0	0	10	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	16
8:15 AM	1	9	1	0	11	1	0	1	0	2	0	6	1	0	7	0	1	0	0	1	21
8:30 AM	0	9	0	0	9	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	12
8:45 AM	0	3	0	0	3	0	0	0	0	0	0	7	0	0	7	0	0	4	0	4	14
Total	1	31	1	0	33	1	0	1	0	2	0	21	2	0	23	0	1	4	0	5	63
Grand Total	7	94	2	0	103	2	1	3	0	6	3	74	5	0	82	2	1	6	0	9	200
Approach %	6.8	91.3	1.9	0.0		33.3	16.7	50.0	0.0		3.7	90.2	6.1	0.0		22.2	11.1	66.7	0.0		
Total %	3.5	47.0	1.0	0.0	51.5	1.0	0.5	1.5	0.0	3.0	1.5	37.0	2.5	0.0	41.0	1.0	0.5	3.0	0.0	4.5	
Exiting Leg Total					82					6					99					13	200
Buses	6	14	2	0	22	2	1	2	0	5	2	15	1	0	18	1	1	5	0	7	52
% Buses	85.7	14.9	100.0	0.0	21.4	100.0	100.0	66.7	0.0	83.3	66.7	20.3	20.0	0.0	22.0	50.0	100.0	83.3	0.0	77.8	26.0
Exiting Leg Total					22					5					17					8	52
Single-Unit Trucks	1	59	0	0	60	0	0	1	0	1	1	42	4	0	47	1	0	1	0	2	110
% Single-Unit	14.3	62.8	0.0	0.0	58.3	0.0	0.0	33.3	0.0	16.7	33.3	56.8	80.0	0.0	57.3	50.0	0.0	16.7	0.0	22.2	55.0
Exiting Leg Total					43					1					61					5	110
Articulated Trucks	0	21	0	0	21	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	38
% Articulated	0.0	22.3	0.0	0.0	20.4	0.0	0.0	0.0	0.0	0.0	0.0	23.0	0.0	0.0	20.7	0.0	0.0	0.0	0.0	0.0	19.0
Exiting Leg Total					17					0					21					0	38

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:30 AM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:30 AM	0	15	0	0	15	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	23
6:45 AM	1	13	1	0	15	0	0	2	0	2	0	3	0	0	3	0	0	0	0	0	20
7:00 AM	0	2	0	0	2	0	0	0	0	0	0	11	1	0	12	1	0	0	0	1	15
7:15 AM	2	9	0	0	11	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	18
Total Volume	3	39	1	0	43	0	0	2	0	2	1	28	1	0	30	1	0	0	0	1	76
% Approach Total	7.0	90.7	2.3	0.0		0.0	0.0	100.0	0.0		3.3	93.3	3.3	0.0		100.0	0.0	0.0	0.0		
PHF	0.375	0.650	0.250	0.000	0.717	0.000	0.000	0.250	0.000	0.250	0.250	0.636	0.250	0.000	0.625	0.250	0.000	0.000	0.000	0.250	0.826
Buses	3	9	1	0	13	0	0	1	0	1	0	12	1	0	13	1	0	0	0	1	28
Buses %	100.0	23.1	100.0	0.0	30.2	0.0	0.0	50.0	0.0	50.0	0.0	42.9	100.0	0.0	43.3	100.0	0.0	0.0	0.0	100.0	36.8
Single-Unit Trucks	0	17	0	0	17	0	0	1	0	1	1	9	0	0	10	0	0	0	0	0	28
Single-Unit %	0.0	43.6	0.0	0.0	39.5	0.0	0.0	50.0	0.0	50.0	100.0	32.1	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	36.8
Articulated Trucks	0	13	0	0	13	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	20
Articulated %	0.0	33.3	0.0	0.0	30.2	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	23.3	0.0	0.0	0.0	0.0	0.0	26.3
Buses	3	9	1	0	13	0	0	1	0	1	0	12	1	0	13	1	0	0	0	1	28
Single-Unit Trucks	0	17	0	0	17	0	0	1	0	1	1	9	0	0	10	0	0	0	0	0	28
Articulated Trucks	0	13	0	0	13	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	20
Total Entering Leg	3	39	1	0	43	0	0	2	0	2	1	28	1	0	30	1	0	0	0	1	76
Buses					12					1					11					4	28
Single-Unit Trucks					9					1					18					0	28
Articulated Trucks					7					0					13					0	20
Total Exiting Leg					28					2					42					4	76

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
6:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 AM	1	1	1	0	3	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	5
Total	2	2	1	0	5	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	8
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	8
7:15 AM	2	7	0	0	9	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	14
7:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
7:45 AM	1	0	0	0	1	1	1	0	0	2	1	0	0	0	1	0	0	0	0	0	4
Total	3	8	0	0	11	1	1	0	0	2	2	11	1	0	14	1	0	0	0	1	28
8:00 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
8:15 AM	1	0	1	0	2	1	0	1	0	2	0	1	0	0	1	0	1	0	0	1	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	4	0	4	7
Total	1	4	1	0	6	1	0	1	0	2	0	3	0	0	3	0	1	4	0	5	16
Grand Total	6	14	2	0	22	2	1	2	0	5	2	15	1	0	18	1	1	5	0	7	52
Approach %	27.3	63.6	9.1	0.0		40.0	20.0	40.0	0.0		11.1	83.3	5.6	0.0		14.3	14.3	71.4	0.0		
Total %	11.5	26.9	3.8	0.0	42.3	3.8	1.9	3.8	0.0	9.6	3.8	28.8	1.9	0.0	34.6	1.9	1.9	9.6	0.0	13.5	
Exiting Leg Total					22					5					17					8	52

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:45 AM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:45 AM	1	1	1	0	3	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	5
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	8
7:15 AM	2	7	0	0	9	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	14
7:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
Total Volume	3	9	1	0	13	0	0	1	0	1	1	12	1	0	14	1	0	0	0	1	29
% Approach Total	23.1	69.2	7.7	0.0		0.0	0.0	100.0	0.0		7.1	85.7	7.1	0.0		100.0	0.0	0.0	0.0		
PHF	0.375	0.321	0.250	0.000	0.361	0.000	0.000	0.250	0.000	0.250	0.250	0.500	0.250	0.000	0.500	0.250	0.000	0.000	0.000	0.250	0.518
Entering Leg	3	9	1	0	13	0	0	1	0	1	1	12	1	0	14	1	0	0	0	1	29
Exiting Leg					12					2					11					4	29
Total					25					3					25					5	58

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	6
6:15 AM	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11
6:30 AM	0	9	0	0	9	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	13
6:45 AM	0	5	0	0	5	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	7
Total	0	21	0	0	21	0	0	1	0	1	1	13	0	0	14	0	0	1	0	1	37
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	6
7:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	1	3	0	0	4	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	9
7:45 AM	0	12	0	0	12	0	0	0	0	0	0	7	1	0	8	1	0	0	0	1	21
Total	1	18	0	0	19	0	0	0	0	0	0	16	2	0	18	1	0	0	0	1	38
8:00 AM	0	5	0	0	5	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	8
8:15 AM	0	6	0	0	6	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	12
8:30 AM	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	10
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
Total	0	20	0	0	20	0	0	0	0	0	0	13	2	0	15	0	0	0	0	0	35
Grand Total	1	59	0	0	60	0	0	1	0	1	1	42	4	0	47	1	0	1	0	2	110
Approach %	1.7	98.3	0.0	0.0		0.0	0.0	100.0	0.0		2.1	89.4	8.5	0.0		50.0	0.0	50.0	0.0		
Total %	0.9	53.6	0.0	0.0	54.5	0.0	0.0	0.9	0.0	0.9	0.9	38.2	3.6	0.0	42.7	0.9	0.0	0.9	0.0	1.8	
Exiting Leg Total					43					1					61					5	110

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:45 AM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:45 AM	0	12	0	0	12	0	0	0	0	0	0	7	1	0	8	1	0	0	0	1	21
8:00 AM	0	5	0	0	5	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	8
8:15 AM	0	6	0	0	6	0	0	0	0	0	0	5	1	0	6	0	0	0	0	0	12
8:30 AM	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	10
Total Volume	0	31	0	0	31	0	0	0	0	0	0	16	3	0	19	1	0	0	0	1	51
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	84.2	15.8	0.0		100.0	0.0	0.0	0.0		
PHF	0.000	0.646	0.000	0.000	0.646	0.000	0.000	0.000	0.000	0.000	0.000	0.571	0.750	0.000	0.594	0.250	0.000	0.000	0.000	0.250	0.607
Entering Leg	0	31	0	0	31	0	0	0	0	0	0	16	3	0	19	1	0	0	0	1	51
Exiting Leg					16					0					32					3	51
Total					47					0					51					4	102

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Articulated Trucks**

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4
6:30 AM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
6:45 AM	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8
Total	0	12	0	0	12	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	21
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
8:00 AM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
8:15 AM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	12
Grand Total	0	21	0	0	21	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	38
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	55.3	0.0	0.0	55.3	0.0	0.0	0.0	0.0	0.0	0.0	44.7	0.0	0.0	44.7	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					17					0					21					0	38

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:15 AM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	4
6:30 AM	0	5	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
6:45 AM	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	13	0	0	13	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	22
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.464	0.000	0.000	0.464	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.611
Entering Leg	0	13	0	0	13	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	22
Exiting Leg					9					0					13					0	22
Total					22					0					22					0	44

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Bicycles (on Roadway and Crosswalks)

	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							0							0							0	0

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:00 AM	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0							0							0	0
Total							0							0							0							0	0

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Pedestrians**

	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							0							0							0							0	0

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:00 AM	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0							0							0	0
Total							0							0							0							0	0

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	17	280	4	1	302	4	0	4	0	8	3	171	22	0	196	23	0	7	0	30	536
3:15 PM	10	166	2	0	178	6	0	3	0	9	1	151	28	0	180	17	0	3	0	20	387
3:30 PM	10	199	3	0	212	8	1	3	0	12	4	137	26	1	168	16	0	5	0	21	413
3:45 PM	3	177	2	0	182	3	0	7	0	10	2	164	19	0	185	23	0	8	0	31	408
Total	40	822	11	1	874	21	1	17	0	39	10	623	95	1	729	79	0	23	0	102	1744
4:00 PM	12	220	3	0	235	5	1	10	0	16	1	160	33	0	194	21	1	6	0	28	473
4:15 PM	15	188	0	1	204	2	1	7	0	10	2	175	43	1	221	14	0	4	0	18	453
4:30 PM	14	192	3	0	209	3	3	3	0	9	3	188	31	1	223	20	0	0	0	20	461
4:45 PM	9	192	0	1	202	4	0	2	0	6	1	170	23	0	194	25	1	4	0	30	432
Total	50	792	6	2	850	14	5	22	0	41	7	693	130	2	832	80	2	14	0	96	1819
5:00 PM	5	192	0	0	197	2	0	8	0	10	4	166	33	1	204	26	0	4	0	30	441
5:15 PM	6	178	2	0	186	4	0	2	0	6	2	153	25	4	184	24	0	8	0	32	408
5:30 PM	6	171	3	0	180	3	0	5	0	8	1	159	26	0	186	24	0	0	0	24	398
5:45 PM	7	173	0	0	180	1	0	1	0	2	1	166	22	2	191	16	0	4	0	20	393
Total	24	714	5	0	743	10	0	16	0	26	8	644	106	7	765	90	0	16	0	106	1640
Grand Total	114	2328	22	3	2467	45	6	55	0	106	25	1960	331	10	2326	249	2	53	0	304	5203
Approach %	4.6	94.4	0.9	0.1		42.5	5.7	51.9	0.0		1.1	84.3	14.2	0.4		81.9	0.7	17.4	0.0		
Total %	2.2	44.7	0.4	0.1	47.4	0.9	0.1	1.1	0.0	2.0	0.5	37.7	6.4	0.2	44.7	4.8	0.0	1.0	0.0	5.8	
Exiting Leg Total					2061					49					2642					451	5203
Cars	108	2296	19	3	2426	43	5	54	0	102	24	1910	329	10	2273	244	2	51	0	297	5098
% Cars	94.7	98.6	86.4	100.0	98.3	95.6	83.3	98.2	0.0	96.2	96.0	97.4	99.4	100.0	97.7	98.0	100.0	96.2	0.0	97.7	98.0
Exiting Leg Total					2007					45					2604					442	5098
Heavy Vehicles	6	32	3	0	41	2	1	1	0	4	1	50	2	0	53	5	0	2	0	7	105
% Heavy Vehicles	5.3	1.4	13.6	0.0	1.7	4.4	16.7	1.8	0.0	3.8	4.0	2.6	0.6	0.0	2.3	2.0	0.0	3.8	0.0	2.3	2.0
Exiting Leg Total					54					4					38					9	105

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:00 PM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	12	220	3	0	235	5	1	10	0	16	1	160	33	0	194	21	1	6	0	28	473
4:15 PM	15	188	0	1	204	2	1	7	0	10	2	175	43	1	221	14	0	4	0	18	453
4:30 PM	14	192	3	0	209	3	3	3	0	9	3	188	31	1	223	20	0	0	0	20	461
4:45 PM	9	192	0	1	202	4	0	2	0	6	1	170	23	0	194	25	1	4	0	30	432
Total Volume	50	792	6	2	850	14	5	22	0	41	7	693	130	2	832	80	2	14	0	96	1819
% Approach Total	5.9	93.2	0.7	0.2		34.1	12.2	53.7	0.0		0.8	83.3	15.6	0.2		83.3	2.1	14.6	0.0		
PHF	0.833	0.900	0.500	0.500	0.904	0.700	0.417	0.550	0.000	0.641	0.583	0.922	0.756	0.500	0.933	0.800	0.500	0.583	0.000	0.800	0.961
Cars	49	779	5	2	835	14	4	22	0	40	7	678	129	2	816	80	2	14	0	96	1787
Cars %	98.0	98.4	83.3	100.0	98.2	100.0	80.0	100.0	0.0	97.6	100.0	97.8	99.2	100.0	98.1	100.0	100.0	100.0	0.0	100.0	98.2
Heavy Vehicles	1	13	1	0	15	0	1	0	0	1	0	15	1	0	16	0	0	0	0	0	32
Heavy Vehicles %	2.0	1.6	16.7	0.0	1.8	0.0	20.0	0.0	0.0	2.4	0.0	2.2	0.8	0.0	1.9	0.0	0.0	0.0	0.0	0.0	1.8
Cars Enter Leg	49	779	5	2	835	14	4	22	0	40	7	678	129	2	816	80	2	14	0	96	1787
Heavy Enter Leg	1	13	1	0	15	0	1	0	0	1	0	15	1	0	16	0	0	0	0	0	32
Total Entering Leg	50	792	6	2	850	14	5	22	0	41	7	693	130	2	832	80	2	14	0	96	1819
Cars Exiting Leg					708					14					883					182	1787
Heavy Exiting Leg					15					1					13					3	32
Total Exiting Leg					723					15					896					185	1819

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	15	279	3	1	298	3	0	4	0	7	3	167	22	0	192	23	0	6	0	29	526
3:15 PM	10	161	2	0	173	6	0	3	0	9	1	147	27	0	175	16	0	3	0	19	376
3:30 PM	9	195	3	0	207	7	1	3	0	11	3	129	26	1	159	15	0	4	0	19	396
3:45 PM	2	172	1	0	175	3	0	7	0	10	2	157	19	0	178	23	0	8	0	31	394
Total	36	807	9	1	853	19	1	17	0	37	9	600	94	1	704	77	0	21	0	98	1692
4:00 PM	11	214	3	0	228	5	0	10	0	15	1	155	33	0	189	21	1	6	0	28	460
4:15 PM	15	184	0	1	200	2	1	7	0	10	2	172	43	1	218	14	0	4	0	18	446
4:30 PM	14	191	2	0	207	3	3	3	0	9	3	184	31	1	219	20	0	0	0	20	455
4:45 PM	9	190	0	1	200	4	0	2	0	6	1	167	22	0	190	25	1	4	0	30	426
Total	49	779	5	2	835	14	4	22	0	40	7	678	129	2	816	80	2	14	0	96	1787
5:00 PM	5	190	0	0	195	2	0	7	0	9	4	163	33	1	201	26	0	4	0	30	435
5:15 PM	5	176	2	0	183	4	0	2	0	6	2	153	25	4	184	22	0	8	0	30	403
5:30 PM	6	171	3	0	180	3	0	5	0	8	1	153	26	0	180	23	0	0	0	23	391
5:45 PM	7	173	0	0	180	1	0	1	0	2	1	163	22	2	188	16	0	4	0	20	390
Total	23	710	5	0	738	10	0	15	0	25	8	632	106	7	753	87	0	16	0	103	1619
Grand Total	108	2296	19	3	2426	43	5	54	0	102	24	1910	329	10	2273	244	2	51	0	297	5098
Approach %	4.5	94.6	0.8	0.1		42.2	4.9	52.9	0.0		1.1	84.0	14.5	0.4		82.2	0.7	17.2	0.0		
Total %	2.1	45.0	0.4	0.1	47.6	0.8	0.1	1.1	0.0	2.0	0.5	37.5	6.5	0.2	44.6	4.8	0.0	1.0	0.0	5.8	
Exiting Leg Total					2007					45					2604					442	5098

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:00 PM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	11	214	3	0	228	5	0	10	0	15	1	155	33	0	189	21	1	6	0	28	460
4:15 PM	15	184	0	1	200	2	1	7	0	10	2	172	43	1	218	14	0	4	0	18	446
4:30 PM	14	191	2	0	207	3	3	3	0	9	3	184	31	1	219	20	0	0	0	20	455
4:45 PM	9	190	0	1	200	4	0	2	0	6	1	167	22	0	190	25	1	4	0	30	426
Total Volume	49	779	5	2	835	14	4	22	0	40	7	678	129	2	816	80	2	14	0	96	1787
% Approach Total	5.9	93.3	0.6	0.2		35.0	10.0	55.0	0.0		0.9	83.1	15.8	0.2		83.3	2.1	14.6	0.0		
PHF	0.817	0.910	0.417	0.500	0.916	0.700	0.333	0.550	0.000	0.667	0.583	0.921	0.750	0.500	0.932	0.800	0.500	0.583	0.000	0.800	0.971
Entering Leg	49	779	5	2	835	14	4	22	0	40	7	678	129	2	816	80	2	14	0	96	1787
Exiting Leg					708					14					883					182	1787
Total					1543					54					1699					278	3574

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	2	1	1	0	4	1	0	0	0	1	0	4	0	0	4	0	0	1	0	1	10
3:15 PM	0	5	0	0	5	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	11
3:30 PM	1	4	0	0	5	1	0	0	0	1	1	8	0	0	9	1	0	1	0	2	17
3:45 PM	1	5	1	0	7	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	14
Total	4	15	2	0	21	2	0	0	0	2	1	23	1	0	25	2	0	2	0	4	52
4:00 PM	1	6	0	0	7	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	13
4:15 PM	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
4:30 PM	0	1	1	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
4:45 PM	0	2	0	0	2	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	6
Total	1	13	1	0	15	0	1	0	0	1	0	15	1	0	16	0	0	0	0	0	32
5:00 PM	0	2	0	0	2	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	6
5:15 PM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	1	0	0	0	1	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Total	1	4	0	0	5	0	0	1	0	1	0	12	0	0	12	3	0	0	0	3	21
Grand Total	6	32	3	0	41	2	1	1	0	4	1	50	2	0	53	5	0	2	0	7	105
Approach %	14.6	78.0	7.3	0.0		50.0	25.0	25.0	0.0		1.9	94.3	3.8	0.0		71.4	0.0	28.6	0.0		
Total %	5.7	30.5	2.9	0.0	39.0	1.9	1.0	1.0	0.0	3.8	1.0	47.6	1.9	0.0	50.5	4.8	0.0	1.9	0.0	6.7	
Exiting Leg Total					54					4					38					9	105
Buses	3	4	2	0	9	2	1	0	0	3	1	12	1	0	14	4	0	2	0	6	32
% Buses	50.0	12.5	66.7	0.0	22.0	100.0	100.0	0.0	0.0	75.0	100.0	24.0	50.0	0.0	26.4	80.0	0.0	100.0	0.0	85.7	30.5
Exiting Leg Total					16					3					8					5	32
Single-Unit Trucks	3	25	0	0	28	0	0	0	0	0	0	30	1	0	31	1	0	0	0	1	60
% Single-Unit	50.0	78.1	0.0	0.0	68.3	0.0	0.0	0.0	0.0	0.0	0.0	60.0	50.0	0.0	58.5	20.0	0.0	0.0	0.0	14.3	57.1
Exiting Leg Total					30					0					26					4	60
Articulated Trucks	0	3	1	0	4	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	13
% Articulated	0.0	9.4	33.3	0.0	9.8	0.0	0.0	100.0	0.0	25.0	0.0	16.0	0.0	0.0	15.1	0.0	0.0	0.0	0.0	0.0	12.4
Exiting Leg Total					8					1					4					0	13

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:15 PM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:15 PM	0	5	0	0	5	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	11
3:30 PM	1	4	0	0	5	1	0	0	0	1	1	8	0	0	9	1	0	1	0	2	17
3:45 PM	1	5	1	0	7	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	14
4:00 PM	1	6	0	0	7	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	13
Total Volume	3	20	1	0	24	1	1	0	0	2	1	24	1	0	26	2	0	1	0	3	55
% Approach Total	12.5	83.3	4.2	0.0		50.0	50.0	0.0	0.0		3.8	92.3	3.8	0.0		66.7	0.0	33.3	0.0		
PHF	0.750	0.833	0.250	0.000	0.857	0.250	0.250	0.000	0.000	0.500	0.250	0.750	0.250	0.000	0.722	0.500	0.000	0.250	0.000	0.375	0.809
Buses	1	2	1	0	4	1	1	0	0	2	1	7	0	0	8	2	0	1	0	3	17
Buses %	33.3	10.0	100.0	0.0	16.7	100.0	100.0	0.0	0.0	100.0	100.0	29.2	0.0	0.0	30.8	100.0	0.0	100.0	0.0	100.0	30.9
Single-Unit Trucks	2	16	0	0	18	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	35
Single-Unit %	66.7	80.0	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	100.0	0.0	65.4	0.0	0.0	0.0	0.0	0.0	63.6
Articulated Trucks	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Articulated %	0.0	10.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	5.5
Buses	1	2	1	0	4	1	1	0	0	2	1	7	0	0	8	2	0	1	0	3	17
Single-Unit Trucks	2	16	0	0	18	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	35
Articulated Trucks	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
Total Entering Leg	3	20	1	0	24	1	1	0	0	2	1	24	1	0	26	2	0	1	0	3	55
Buses					9					2					4					2	17
Single-Unit Trucks					16					0					16					3	35
Articulated Trucks					1					0					2					0	3
Total Exiting Leg					26					2					22					5	55

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Buses

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	2	0	1	0	3	1	0	0	0	1	0	3	0	0	3	0	0	1	0	1	8
3:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
3:30 PM	0	0	0	0	0	1	0	0	0	1	1	3	0	0	4	1	0	1	0	2	7
3:45 PM	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total	3	1	2	0	6	2	0	0	0	2	1	9	0	0	10	2	0	2	0	4	22
4:00 PM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	3
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	3	0	0	3	0	1	0	0	1	0	1	1	0	2	0	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	2	4
Grand Total	3	4	2	0	9	2	1	0	0	3	1	12	1	0	14	4	0	2	0	6	32
Approach %	33.3	44.4	22.2	0.0		66.7	33.3	0.0	0.0		7.1	85.7	7.1	0.0		66.7	0.0	33.3	0.0		
Total %	9.4	12.5	6.3	0.0	28.1	6.3	3.1	0.0	0.0	9.4	3.1	37.5	3.1	0.0	43.8	12.5	0.0	6.3	0.0	18.8	
Exiting Leg Total					16					3					8					5	32

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	2	0	1	0	3	1	0	0	0	1	0	3	0	0	3	0	0	1	0	1	8
3:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
3:30 PM	0	0	0	0	0	1	0	0	0	1	1	3	0	0	4	1	0	1	0	2	7
3:45 PM	1	0	1	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total Volume	3	1	2	0	6	2	0	0	0	2	1	9	0	0	10	2	0	2	0	4	22
% Approach Total	50.0	16.7	33.3	0.0		100.0	0.0	0.0	0.0		10.0	90.0	0.0	0.0		50.0	0.0	50.0	0.0		
PHF	0.375	0.250	0.500	0.000	0.500	0.500	0.000	0.000	0.000	0.500	0.250	0.750	0.000	0.000	0.625	0.500	0.000	0.500	0.000	0.500	0.688
Entering Leg	3	1	2	0	6	2	0	0	0	2	1	9	0	0	10	2	0	2	0	4	22
Exiting Leg					13					3					3					3	22
Total					19					5					13					7	44

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Single-Unit Trucks

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
3:15 PM	0	4	0	0	4	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	8
3:30 PM	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
3:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Total	1	13	0	0	14	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	28
4:00 PM	1	4	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
4:15 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total	1	9	0	0	10	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	20
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
5:15 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	5
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
Total	1	3	0	0	4	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	12
Grand Total	3	25	0	0	28	0	0	0	0	0	0	30	1	0	31	1	0	0	0	1	60
Approach %	10.7	89.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	96.8	3.2	0.0		100.0	0.0	0.0	0.0		
Total %	5.0	41.7	0.0	0.0	46.7	0.0	0.0	0.0	0.0	0.0	0.0	50.0	1.7	0.0	51.7	1.7	0.0	0.0	0.0	1.7	
Exiting Leg Total					30					0					26					4	60

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:15 PM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:15 PM	0	4	0	0	4	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	8
3:30 PM	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
3:45 PM	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
4:00 PM	1	4	0	0	5	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	9
Total Volume	2	16	0	0	18	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	35
% Approach Total	11.1	88.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	94.1	5.9	0.0		0.0	0.0	0.0	0.0		
PHF	0.500	1.000	0.000	0.000	0.900	0.000	0.000	0.000	0.000	0.000	0.000	0.800	0.250	0.000	0.850	0.000	0.000	0.000	0.000	0.000	0.875
Entering Leg	2	16	0	0	18	0	0	0	0	0	0	16	1	0	17	0	0	0	0	0	35
Exiting Leg					16					0					16					3	35
Total					34					0					33					3	70

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Articulated Trucks

	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	1	1	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
5:00 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	5
Grand Total	0	3	1	0	4	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	13
Approach %	0.0	75.0	25.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	23.1	7.7	0.0	30.8	0.0	0.0	7.7	0.0	7.7	0.0	61.5	0.0	0.0	61.5	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					8					1					4					0	13

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:45 PM	Commercial Street (Rt 140) from North					Walnut Street from East					Commercial Street (Rt 140) from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:30 PM	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total Volume	0	2	1	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
% Approach Total	0.0	66.7	33.3	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.500	0.250	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.583
Entering Leg	0	2	1	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
Exiting Leg					4					1					2					0	7
Total					7					1					6					0	14

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Bicycles (on Roadway and Crosswalks)

	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							0							0							1	1

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1
Exiting Leg							0							0							0							1	1
Total							0							0							1							1	2

PDI File #: **228636 A**
Location: **N: Commercial St (Rt 140) S: Commercial St (Rt 140)**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Pedestrians

	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							0							0							0							0	0

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	Commercial Street (Rt 140) from North							Walnut Street from East							Commercial Street (Rt 140) from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0							0							0	0
Total							0							0							0							0	0

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	6	0	6	0	2	0	0	2	2	1	0	0	3	0	5	1	0	6	17
6:15 AM	0	0	4	0	4	3	3	0	0	6	4	1	1	0	6	1	6	0	0	7	23
6:30 AM	0	1	4	0	5	3	4	1	0	8	0	0	0	0	0	1	18	0	0	19	32
6:45 AM	0	0	7	0	7	14	6	0	0	20	1	1	0	0	2	0	17	0	0	17	46
Total	0	1	21	0	22	20	15	1	0	36	7	3	1	0	11	2	46	1	0	49	118
7:00 AM	0	0	7	0	7	15	2	1	0	18	0	1	0	0	1	0	21	1	0	22	48
7:15 AM	0	2	14	0	16	22	22	1	0	45	2	2	0	0	4	0	31	0	0	31	96
7:30 AM	0	4	4	0	8	8	34	0	0	42	3	1	1	0	5	2	31	0	0	33	88
7:45 AM	0	0	7	0	7	7	14	4	0	25	0	0	1	0	1	0	20	0	0	20	53
Total	0	6	32	0	38	52	72	6	0	130	5	4	2	0	11	2	103	1	0	106	285
8:00 AM	0	0	6	0	6	6	17	0	0	23	1	0	0	0	1	0	18	1	0	19	49
8:15 AM	0	0	7	0	7	8	23	3	0	34	1	0	1	0	2	0	14	0	0	14	57
8:30 AM	0	0	3	0	3	4	11	0	0	15	3	2	1	0	6	1	17	1	0	19	43
8:45 AM	0	0	10	0	10	13	17	0	0	30	0	2	0	0	2	0	17	0	0	17	59
Total	0	0	26	0	26	31	68	3	0	102	5	4	2	0	11	1	66	2	0	69	208
Grand Total	0	7	79	0	86	103	155	10	0	268	17	11	5	0	33	5	215	4	0	224	611
Approach %	0.0	8.1	91.9	0.0		38.4	57.8	3.7	0.0		51.5	33.3	15.2	0.0		2.2	96.0	1.8	0.0		
Total %	0.0	1.1	12.9	0.0	14.1	16.9	25.4	1.6	0.0	43.9	2.8	1.8	0.8	0.0	5.4	0.8	35.2	0.7	0.0	36.7	
Exiting Leg Total					118					311					22					160	611
Cars	0	6	74	0	80	100	147	9	0	256	17	11	3	0	31	5	212	4	0	221	588
% Cars	0.0	85.7	93.7	0.0	93.0	97.1	94.8	90.0	0.0	95.5	100.0	100.0	60.0	0.0	93.9	100.0	98.6	100.0	0.0	98.7	96.2
Exiting Leg Total					115					303					20					150	588
Heavy Vehicles	0	1	5	0	6	3	8	1	0	12	0	0	2	0	2	0	3	0	0	3	23
% Heavy Vehicles	0.0	14.3	6.3	0.0	7.0	2.9	5.2	10.0	0.0	4.5	0.0	0.0	40.0	0.0	6.1	0.0	1.4	0.0	0.0	1.3	3.8
Exiting Leg Total					3					8					2					10	23

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:15 AM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	2	14	0	16	22	22	1	0	45	2	2	0	0	4	0	31	0	0	31	96
7:30 AM	0	4	4	0	8	8	34	0	0	42	3	1	1	0	5	2	31	0	0	33	88
7:45 AM	0	0	7	0	7	7	14	4	0	25	0	0	1	0	1	0	20	0	0	20	53
8:00 AM	0	0	6	0	6	6	17	0	0	23	1	0	0	0	1	0	18	1	0	19	49
Total Volume	0	6	31	0	37	43	87	5	0	135	6	3	2	0	11	2	100	1	0	103	286
% Approach Total	0.0	16.2	83.8	0.0		31.9	64.4	3.7	0.0		54.5	27.3	18.2	0.0		1.9	97.1	1.0	0.0		
PHF	0.000	0.375	0.554	0.000	0.578	0.489	0.640	0.313	0.000	0.750	0.500	0.375	0.500	0.000	0.550	0.250	0.806	0.250	0.000	0.780	0.745
Cars	0	5	31	0	36	42	81	5	0	128	6	3	1	0	10	2	99	1	0	102	276
Cars %	0.0	83.3	100.0	0.0	97.3	97.7	93.1	100.0	0.0	94.8	100.0	100.0	50.0	0.0	90.9	100.0	99.0	100.0	0.0	99.0	96.5
Heavy Vehicles	0	1	0	0	1	1	6	0	0	7	0	0	1	0	1	0	1	0	0	1	10
Heavy Vehicles %	0.0	16.7	0.0	0.0	2.7	2.3	6.9	0.0	0.0	5.2	0.0	0.0	50.0	0.0	9.1	0.0	1.0	0.0	0.0	1.0	3.5
Cars Enter Leg	0	5	31	0	36	42	81	5	0	128	6	3	1	0	10	2	99	1	0	102	276
Heavy Enter Leg	0	1	0	0	1	1	6	0	0	7	0	0	1	0	1	0	1	0	0	1	10
Total Entering Leg	0	6	31	0	37	43	87	5	0	135	6	3	2	0	11	2	100	1	0	103	286
Cars Exiting Leg					46					136					12					82	276
Heavy Exiting Leg					1					1					1					7	10
Total Exiting Leg					47					137					13					89	286

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Cars

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	6	0	6	0	2	0	0	2	2	1	0	0	3	0	5	1	0	6	17
6:15 AM	0	0	3	0	3	3	2	0	0	5	4	1	1	0	6	1	6	0	0	7	21
6:30 AM	0	1	4	0	5	3	4	1	0	8	0	0	0	0	0	1	18	0	0	19	32
6:45 AM	0	0	7	0	7	14	5	0	0	19	1	1	0	0	2	0	17	0	0	17	45
Total	0	1	20	0	21	20	13	1	0	34	7	3	1	0	11	2	46	1	0	49	115
7:00 AM	0	0	6	0	6	14	2	1	0	17	0	1	0	0	1	0	21	1	0	22	46
7:15 AM	0	1	14	0	15	22	20	1	0	43	2	2	0	0	4	0	31	0	0	31	93
7:30 AM	0	4	4	0	8	8	32	0	0	40	3	1	0	0	4	2	31	0	0	33	85
7:45 AM	0	0	7	0	7	7	12	4	0	23	0	0	1	0	1	0	19	0	0	19	50
Total	0	5	31	0	36	51	66	6	0	123	5	4	1	0	10	2	102	1	0	105	274
8:00 AM	0	0	6	0	6	5	17	0	0	22	1	0	0	0	1	0	18	1	0	19	48
8:15 AM	0	0	7	0	7	7	23	2	0	32	1	0	0	0	1	0	13	0	0	13	53
8:30 AM	0	0	3	0	3	4	11	0	0	15	3	2	1	0	6	1	17	1	0	19	43
8:45 AM	0	0	7	0	7	13	17	0	0	30	0	2	0	0	2	0	16	0	0	16	55
Total	0	0	23	0	23	29	68	2	0	99	5	4	1	0	10	1	64	2	0	67	199
Grand Total	0	6	74	0	80	100	147	9	0	256	17	11	3	0	31	5	212	4	0	221	588
Approach %	0.0	7.5	92.5	0.0		39.1	57.4	3.5	0.0		54.8	35.5	9.7	0.0		2.3	95.9	1.8	0.0		
Total %	0.0	1.0	12.6	0.0	13.6	17.0	25.0	1.5	0.0	43.5	2.9	1.9	0.5	0.0	5.3	0.9	36.1	0.7	0.0	37.6	
Exiting Leg Total					115					303					20					150	588

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:15 AM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	0	1	14	0	15	22	20	1	0	43	2	2	0	0	4	0	31	0	0	31	93
7:30 AM	0	4	4	0	8	8	32	0	0	40	3	1	0	0	4	2	31	0	0	33	85
7:45 AM	0	0	7	0	7	7	12	4	0	23	0	0	1	0	1	0	19	0	0	19	50
8:00 AM	0	0	6	0	6	5	17	0	0	22	1	0	0	0	1	0	18	1	0	19	48
Total Volume	0	5	31	0	36	42	81	5	0	128	6	3	1	0	10	2	99	1	0	102	276
% Approach Total	0.0	13.9	86.1	0.0		32.8	63.3	3.9	0.0		60.0	30.0	10.0	0.0		2.0	97.1	1.0	0.0		
PHF	0.000	0.313	0.554	0.000	0.600	0.477	0.633	0.313	0.000	0.744	0.500	0.375	0.250	0.000	0.625	0.250	0.798	0.250	0.000	0.773	0.742
Entering Leg	0	5	31	0	36	42	81	5	0	128	6	3	1	0	10	2	99	1	0	102	276
Exiting Leg					46					136					12					82	276
Total					82					264					22					184	552

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:00 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	0	1	1	0	2	1	6	0	0	7	0	0	1	0	1	0	1	0	0	1	11
8:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	1	0	1	0	2	0	0	1	0	1	0	1	0	0	1	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
Total	0	0	3	0	3	2	0	1	0	3	0	0	1	0	1	0	2	0	0	2	9
Grand Total	0	1	5	0	6	3	8	1	0	12	0	0	2	0	2	0	3	0	0	3	23
Approach %	0.0	16.7	83.3	0.0		25.0	66.7	8.3	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	4.3	21.7	0.0	26.1	13.0	34.8	4.3	0.0	52.2	0.0	0.0	8.7	0.0	8.7	0.0	13.0	0.0	0.0	13.0	
Exiting Leg Total					3					8					2					10	23
Buses	0	1	5	0	6	1	5	1	0	7	0	0	2	0	2	0	2	0	0	2	17
% Buses	0.0	100.0	100.0	0.0	100.0	33.3	62.5	100.0	0.0	58.3	0.0	0.0	100.0	0.0	100.0	0.0	66.7	0.0	0.0	66.7	73.9
Exiting Leg Total					1					7					2					7	17
Single-Unit Trucks	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	1	0	0	1	6
% Single-Unit	0.0	0.0	0.0	0.0	0.0	66.7	37.5	0.0	0.0	41.7	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	33.3	26.1
Exiting Leg Total					2					1					0					3	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:00 AM	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	1	1	0	2	1	6	0	0	7	0	0	1	0	1	0	1	0	0	1	11
% Approach Total	0.0	50.0	50.0	0.0		14.3	85.7	0.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.500	0.250	0.750	0.000	0.000	0.875	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.917
Buses	0	1	1	0	2	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	7
Buses %	0.0	100.0	100.0	0.0	100.0	100.0	50.0	0.0	0.0	57.1	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	63.6
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 %	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	42.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	36.4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	1	1	0	2	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	7
Single-Unit Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	1	1	0	2	1	6	0	0	7	0	0	1	0	1	0	1	0	0	1	11
Buses					1					1					1					4	7
Single-Unit Trucks					0					1					0					3	4
Articulated Trucks					0					0					0					0	0
Total Exiting Leg					1					2					1					7	11

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:00 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	1	0	2	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
Total	0	0	3	0	3	0	0	1	0	1	0	0	1	0	1	0	2	0	0	2	7
Grand Total	0	1	5	0	6	1	5	1	0	7	0	0	2	0	2	0	2	0	0	2	17
Approach %	0.0	16.7	83.3	0.0		14.3	71.4	14.3	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	5.9	29.4	0.0	35.3	5.9	29.4	5.9	0.0	41.2	0.0	0.0	11.8	0.0	11.8	0.0	11.8	0.0	0.0	11.8	
Exiting Leg Total					1					7					2					7	17

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:45 AM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total Volume	0	1	1	0	2	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	7
% Approach Total	0.0	50.0	50.0	0.0		25.0	75.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.250	0.000	0.500	0.250	0.375	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.583
Entering Leg	0	1	1	0	2	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	7
Exiting Leg					1					1					1					4	7
Total					3					5					2					4	14

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
8:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	1	0	0	1	6
Approach %	0.0	0.0	0.0	0.0		40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	33.3	50.0	0.0	0.0	83.3	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	16.7	
Exiting Leg Total					2					1					0					3	6

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:30 AM	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
8:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	1	0	0	1	6
% Approach Total	0.0	0.0	0.0	0.0		40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.500	0.375	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.750
Entering Leg	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	1	0	0	1	6
Exiting Leg					2					1					0					3	6
Total					2					6					0					4	12

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Articulated Trucks**

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:00 AM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg					0					0					0					0	0
Total					0					0					0					0	0

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Bicycles (on Roadway and Crosswalks)

	North High Street							Walnut Street							North High Street							Walnut Street							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total							0							0							0							0	0

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

6:00 AM	North High Street							Walnut Street							North High Street							Walnut Street							
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0							0							0	0
Total							0							0							0							0	0

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **6:00 AM**
End Time: **9:00 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	North High Street from North							Walnut Street from East							North High Street from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	3
Approach %	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	100	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	
Exiting Leg Total							0							0							0							3	3

Peak Hour Analysis from 06:00 AM to 09:00 AM begins at:

7:30 AM	North High Street from North							Walnut Street from East							North High Street from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Exiting Leg							0							0							0							2	2
Total							0							0							0							4	4

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	1	12	0	13	4	33	2	0	39	3	0	2	0	5	0	13	0	0	13	70
3:15 PM	0	0	12	0	12	8	29	1	0	38	0	0	2	0	2	2	10	0	0	12	64
3:30 PM	0	2	7	0	9	2	30	3	0	35	2	1	1	0	4	2	18	0	0	20	68
3:45 PM	0	1	11	0	12	6	16	2	0	24	5	2	1	0	8	0	14	0	0	14	58
Total	0	4	42	0	46	20	108	8	0	136	10	3	6	0	19	4	55	0	0	59	260
4:00 PM	0	3	6	0	9	14	28	0	0	42	3	0	2	0	5	0	18	0	0	18	74
4:15 PM	0	0	3	0	3	5	51	0	1	57	0	0	2	0	2	0	11	0	0	11	73
4:30 PM	0	0	4	0	4	7	41	3	0	51	0	0	2	0	2	0	18	1	0	19	76
4:45 PM	0	2	7	0	9	4	22	1	0	27	1	0	1	0	2	0	18	1	0	19	57
Total	0	5	20	0	25	30	142	4	1	177	4	0	7	0	11	0	65	2	0	67	280
5:00 PM	0	4	4	0	8	3	31	6	0	40	1	1	2	0	4	1	24	0	0	25	77
5:15 PM	0	1	8	0	9	5	24	1	0	30	4	1	1	0	6	0	17	1	0	18	63
5:30 PM	0	0	11	0	11	9	18	5	0	32	0	5	0	0	5	1	16	2	0	19	67
5:45 PM	0	0	6	0	6	6	23	2	0	31	1	2	1	0	4	0	11	0	0	11	52
Total	0	5	29	0	34	23	96	14	0	133	6	9	4	0	19	2	68	3	0	73	259
Grand Total	0	14	91	0	105	73	346	26	1	446	20	12	17	0	49	6	188	5	0	199	799
Approach %	0.0	13.3	86.7	0.0		16.4	77.6	5.8	0.2		40.8	24.5	34.7	0.0		3.0	94.5	2.5	0.0		
Total %	0.0	1.8	11.4	0.0	13.1	9.1	43.3	3.3	0.1	55.8	2.5	1.5	2.1	0.0	6.1	0.8	23.5	0.6	0.0	24.9	
Exiting Leg Total					90					300					46					363	799
Cars	0	14	88	0	102	73	338	26	1	438	19	12	16	0	47	4	183	5	0	192	779
% Cars	0.0	100.0	96.7	0.0	97.1	100.0	97.7	100.0	100.0	98.2	95.0	100.0	94.1	0.0	95.9	66.7	97.3	100.0	0.0	96.5	97.5
Exiting Leg Total					90					291					44					354	779
Heavy Vehicles	0	0	3	0	3	0	8	0	0	8	1	0	1	0	2	2	5	0	0	7	20
% Heavy Vehicles	0.0	0.0	3.3	0.0	2.9	0.0	2.3	0.0	0.0	1.8	5.0	0.0	5.9	0.0	4.1	33.3	2.7	0.0	0.0	3.5	2.5
Exiting Leg Total					0					9					2					9	20

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:15 PM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:15 PM	0	0	3	0	3	5	51	0	1	57	0	0	2	0	2	0	11	0	0	11	73
4:30 PM	0	0	4	0	4	7	41	3	0	51	0	0	2	0	2	0	18	1	0	19	76
4:45 PM	0	2	7	0	9	4	22	1	0	27	1	0	1	0	2	0	18	1	0	19	57
5:00 PM	0	4	4	0	8	3	31	6	0	40	1	1	2	0	4	1	24	0	0	25	77
Total Volume	0	6	18	0	24	19	145	10	1	175	2	1	7	0	10	1	71	2	0	74	283
% Approach Total	0.0	25.0	75.0	0.0		10.9	82.9	5.7	0.6		20.0	10.0	70.0	0.0		1.4	95.9	2.7	0.0		
PHF	0.000	0.375	0.643	0.000	0.667	0.679	0.711	0.417	0.250	0.768	0.500	0.250	0.875	0.000	0.625	0.250	0.740	0.500	0.000	0.740	0.919
Cars	0	6	18	0	24	19	144	10	1	174	2	1	7	0	10	1	71	2	0	74	282
Cars %	0.0	100.0	100.0	0.0	100.0	100.0	99.3	100.0	100.0	99.4	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	99.6
Heavy Vehicles	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Cars Enter Leg	0	6	18	0	24	19	144	10	1	174	2	1	7	0	10	1	71	2	0	74	282
Heavy Enter Leg	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total Entering Leg	0	6	18	0	24	19	145	10	1	175	2	1	7	0	10	1	71	2	0	74	283
Cars Exiting Leg					22					92					17					151	282
Heavy Exiting Leg					0					0					0					1	1
Total Exiting Leg					22					92					17					152	283

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Cars**

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	1	11	0	12	4	31	2	0	37	3	0	2	0	5	0	13	0	0	13	67
3:15 PM	0	0	11	0	11	8	27	1	0	36	0	0	2	0	2	2	9	0	0	11	60
3:30 PM	0	2	7	0	9	2	28	3	0	33	1	1	0	0	2	0	17	0	0	17	61
3:45 PM	0	1	11	0	12	6	16	2	0	24	5	2	1	0	8	0	14	0	0	14	58
Total	0	4	40	0	44	20	102	8	0	130	9	3	5	0	17	2	53	0	0	55	246
4:00 PM	0	3	6	0	9	14	28	0	0	42	3	0	2	0	5	0	18	0	0	18	74
4:15 PM	0	0	3	0	3	5	51	0	1	57	0	0	2	0	2	0	11	0	0	11	73
4:30 PM	0	0	4	0	4	7	41	3	0	51	0	0	2	0	2	0	18	1	0	19	76
4:45 PM	0	2	7	0	9	4	22	1	0	27	1	0	1	0	2	0	18	1	0	19	57
Total	0	5	20	0	25	30	142	4	1	177	4	0	7	0	11	0	65	2	0	67	280
5:00 PM	0	4	4	0	8	3	30	6	0	39	1	1	2	0	4	1	24	0	0	25	76
5:15 PM	0	1	7	0	8	5	24	1	0	30	4	1	1	0	6	0	15	1	0	16	60
5:30 PM	0	0	11	0	11	9	17	5	0	31	0	5	0	0	5	1	15	2	0	18	65
5:45 PM	0	0	6	0	6	6	23	2	0	31	1	2	1	0	4	0	11	0	0	11	52
Total	0	5	28	0	33	23	94	14	0	131	6	9	4	0	19	2	65	3	0	70	253
Grand Total	0	14	88	0	102	73	338	26	1	438	19	12	16	0	47	4	183	5	0	192	779
Approach %	0.0	13.7	86.3	0.0		16.7	77.2	5.9	0.2		40.4	25.5	34.0	0.0		2.1	95.3	2.6	0.0		
Total %	0.0	1.8	11.3	0.0	13.1	9.4	43.4	3.3	0.1	56.2	2.4	1.5	2.1	0.0	6.0	0.5	23.5	0.6	0.0	24.6	
Exiting Leg Total					90					291					44					354	779

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:15 PM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:15 PM	0	0	3	0	3	5	51	0	1	57	0	0	2	0	2	0	11	0	0	11	73
4:30 PM	0	0	4	0	4	7	41	3	0	51	0	0	2	0	2	0	18	1	0	19	76
4:45 PM	0	2	7	0	9	4	22	1	0	27	1	0	1	0	2	0	18	1	0	19	57
5:00 PM	0	4	4	0	8	3	30	6	0	39	1	1	2	0	4	1	24	0	0	25	76
Total Volume	0	6	18	0	24	19	144	10	1	174	2	1	7	0	10	1	71	2	0	74	282
% Approach Total	0.0	25.0	75.0	0.0		10.9	82.8	5.7	0.6		20.0	10.0	70.0	0.0		1.4	95.9	2.7	0.0		
PHF	0.000	0.375	0.643	0.000	0.667	0.679	0.706	0.417	0.250	0.763	0.500	0.250	0.875	0.000	0.625	0.250	0.740	0.500	0.000	0.740	0.928
Entering Leg	0	6	18	0	24	19	144	10	1	174	2	1	7	0	10	1	71	2	0	74	282
Exiting Leg					22					92					17					151	282
Total					46					266					27					225	564

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
3:15 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
3:30 PM	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	2	1	0	0	3	7
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	2	0	6	0	0	6	1	0	1	0	2	2	2	0	0	4	14
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
Grand Total	0	0	3	0	3	0	8	0	0	8	1	0	1	0	2	2	5	0	0	7	20
Approach %	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		50.0	0.0	50.0	0.0		28.6	71.4	0.0	0.0		
Total %	0.0	0.0	15.0	0.0	15.0	0.0	40.0	0.0	0.0	40.0	5.0	0.0	5.0	0.0	10.0	10.0	25.0	0.0	0.0	35.0	
Exiting Leg Total					0					9					2					9	20
Buses	0	0	3	0	3	0	3	0	0	3	1	0	0	0	1	1	2	0	0	3	10
% Buses	0.0	0.0	100.0	0.0	100.0	0.0	37.5	0.0	0.0	37.5	100.0	0.0	0.0	0.0	50.0	50.0	40.0	0.0	0.0	42.9	50.0
Exiting Leg Total					0					6					1					3	10
Single-Unit Trucks	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	1	1	0	0	2	8
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	62.5	0.0	0.0	62.5	0.0	0.0	100.0	0.0	50.0	50.0	20.0	0.0	0.0	28.6	40.0
Exiting Leg Total					0					1					1					6	8
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	28.6	10.0
Exiting Leg Total					0					2					0					0	2

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
3:15 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
3:30 PM	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	2	1	0	0	3	7
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	2	0	2	0	6	0	0	6	1	0	1	0	2	2	2	0	0	4	14
% Approach Total	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		50.0	0.0	50.0	0.0		50.0	50.0	0.0	0.0		
PHF	0.000	0.000	0.500	0.000	0.500	0.000	0.750	0.000	0.000	0.750	0.250	0.000	0.250	0.000	0.250	0.250	0.500	0.000	0.000	0.333	0.500
Buses	0	0	2	0	2	0	2	0	0	2	1	0	0	0	1	1	1	0	0	2	7
Buses %	0.0	0.0	100.0	0.0	100.0	0.0	33.3	0.0	0.0	33.3	100.0	0.0	0.0	0.0	50.0	50.0	50.0	0.0	0.0	50.0	50.0
Single-Unit Trucks	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	1	1	0	0	2	7
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	66.7	0.0	0.0	100.0	0.0	50.0	50.0	50.0	0.0	0.0	50.0	50.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	2	0	2	0	2	0	0	2	1	0	0	0	1	1	1	0	0	2	7
Single-Unit Trucks	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	1	1	0	0	2	7
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	2	0	2	0	6	0	0	6	1	0	1	0	2	2	2	0	0	4	14
Buses					0					4					1					2	7
Single-Unit Trucks					0					1					1					5	7
Articulated Trucks					0					0					0					0	0
Total Exiting Leg					0					5					2					7	14

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Buses**

	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
3:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	2	3
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	2	0	2	0	0	2	1	0	0	0	1	1	1	0	0	2	7
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
Grand Total	0	0	3	0	3	0	3	0	0	3	1	0	0	0	1	1	2	0	0	3	10
Approach %	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0		
Total %	0.0	0.0	30.0	0.0	30.0	0.0	30.0	0.0	0.0	30.0	10.0	0.0	0.0	0.0	10.0	10.0	20.0	0.0	0.0	30.0	
Exiting Leg Total					0					6					1					3	10

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
3:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	2	3
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	2	0	2	0	2	0	0	2	1	0	0	0	1	1	1	0	0	2	7
% Approach Total	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		50.0	50.0	0.0	0.0		
PHF	0.000	0.000	0.500	0.000	0.500	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.250	0.583
Entering Leg	0	0	2	0	2	0	2	0	0	2	1	0	0	0	1	1	1	0	0	2	7
Exiting Leg					0					4					1					2	7
Total					2					6					2					4	14

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Single-Unit Trucks**

	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
3:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	4
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	1	1	0	0	2	7
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	5	0	0	5	0	0	1	0	1	1	1	0	0	2	8
Approach %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		50.0	50.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	62.5	0.0	0.0	62.5	0.0	0.0	12.5	0.0	12.5	12.5	12.5	0.0	0.0	25.0	
Exiting Leg Total					0					1					1					6	8

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	North High Street from North					Walnut Street from East					North High Street from South					Walnut Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
3:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	4
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	1	1	0	0	2	7
% Approach Total	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		50.0	50.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.250	0.250	0.250	0.000	0.000	0.500	0.438
Entering Leg	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	1	1	0	0	2	7
Exiting Leg					0					1					1					5	7
Total					0					5					2					7	14

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Articulated Trucks

	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Approach %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0	
Exiting Leg Total					0					2					0					0	2

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	North High Street					Walnut Street					North High Street					Walnut Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
% Approach Total	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Exiting Leg					0					2					0					0	2
Total					0					2					0					2	4

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Bicycles (on Roadway and Crosswalks)**

	North High Street from North							Walnut Street from East							North High Street from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	1	3
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	1	1	0	0	0	0	0	1	4
Grand Total	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	1	1	0	0	0	0	0	1	4
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	25.0	0.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	0.0	0.0	0.0	0.0	25.0	
Exiting Leg Total							0							1							1							2	4

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

4:45 PM	North High Street from North							Walnut Street from East							North High Street from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	1	3
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	1	1	0	0	0	0	0	1	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.333
Entering Leg	0	0	0	0	0	0	0	0	2	0	0	0	0	2	1	0	0	0	0	0	1	1	0	0	0	0	0	1	4
Exiting Leg							0							1							1							2	4
Total							0							3							2							3	8

PDI File #: **228636 B**
Location: **N: North High Street S: North High Street**
Location: **E: Walnut Street W: Walnut Street**
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**
Count Date: **Wednesday, June 1, 2022**
Start Time: **3:00 PM**
End Time: **6:00 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	North High Street from North							Walnut Street from East							North High Street from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							0							0							0							0	0

Peak Hour Analysis from 03:00 PM to 06:00 PM begins at:

3:00 PM	North High Street from North							Walnut Street from East							North High Street from South							Walnut Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg							0							0							0							0	0
Total							0							0							0							0	0

AUTOMATIC TRAFFIC RECORDER (ATR)

Walnut Street
west of Route 140
City, State: **Foxborough, MA**
Client: **W&S/J. Santacruce**
Site Code: **ENG22-0467**

PRECISION D A T A INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: **228636 ATR-A**

Count Date:
Wednesday, June 1, 2022

Volume

EB						WB						Combined					
Start Time:	15 min	60 min		15 min	60 min	Start Time:	15 min	60 min		15 min	60 min	Start Time:	15 min	60 min		15 min	60 min
12:00 AM	0		12:00 PM	18		12:00 AM	1		12:00 PM	21		12:00 AM	1		12:00 PM	39	
12:15 AM	2		12:15 PM	13		12:15 AM	3		12:15 PM	18		12:15 AM	5		12:15 PM	31	
12:30 AM	0		12:30 PM	24		12:30 AM	2		12:30 PM	19		12:30 AM	2		12:30 PM	43	
12:45 AM	0	2	12:45 PM	22	77	12:45 AM	0	6	12:45 PM	20	78	12:45 AM	0	8	12:45 PM	42	155
1:00 AM	0		1:00 PM	18		1:00 AM	1		1:00 PM	28		1:00 AM	1		1:00 PM	46	
1:15 AM	0		1:15 PM	15		1:15 AM	1		1:15 PM	13		1:15 AM	1		1:15 PM	28	
1:30 AM	0		1:30 PM	27		1:30 AM	0		1:30 PM	25		1:30 AM	0		1:30 PM	52	
1:45 AM	1	1	1:45 PM	27	87	1:45 AM	1	3	1:45 PM	27	93	1:45 AM	2	4	1:45 PM	54	180
2:00 AM	1		2:00 PM	34		2:00 AM	0		2:00 PM	21		2:00 AM	1		2:00 PM	55	
2:15 AM	0		2:15 PM	33		2:15 AM	1		2:15 PM	31		2:15 AM	1		2:15 PM	64	
2:30 AM	2		2:30 PM	41		2:30 AM	0		2:30 PM	30		2:30 AM	2		2:30 PM	71	
2:45 AM	0	3	2:45 PM	29	137	2:45 AM	0	1	2:45 PM	31	113	2:45 AM	0	4	2:45 PM	60	250
3:00 AM	1		3:00 PM	30		3:00 AM	0		3:00 PM	40		3:00 AM	1		3:00 PM	70	
3:15 AM	0		3:15 PM	22		3:15 AM	0		3:15 PM	40		3:15 AM	0		3:15 PM	62	
3:30 AM	1		3:30 PM	24		3:30 AM	0		3:30 PM	36		3:30 AM	1		3:30 PM	60	
3:45 AM	1	3	3:45 PM	31	107	3:45 AM	0	0	3:45 PM	26	142	3:45 AM	1	3	3:45 PM	57	249
4:00 AM	4		4:00 PM	28		4:00 AM	2		4:00 PM	45		4:00 AM	6		4:00 PM	73	
4:15 AM	1		4:15 PM	16		4:15 AM	1		4:15 PM	58		4:15 AM	2		4:15 PM	74	
4:30 AM	3		4:30 PM	21		4:30 AM	1		4:30 PM	47		4:30 AM	4		4:30 PM	68	
4:45 AM	7	15	4:45 PM	27	92	4:45 AM	1	5	4:45 PM	27	177	4:45 AM	8	20	4:45 PM	54	269
5:00 AM	12		5:00 PM	29		5:00 AM	7		5:00 PM	41		5:00 AM	19		5:00 PM	70	
5:15 AM	6		5:15 PM	34		5:15 AM	6		5:15 PM	34		5:15 AM	12		5:15 PM	68	
5:30 AM	12		5:30 PM	24		5:30 AM	5		5:30 PM	31		5:30 AM	17		5:30 PM	55	
5:45 AM	14	44	5:45 PM	20	107	5:45 AM	1	19	5:45 PM	33	139	5:45 AM	15	63	5:45 PM	53	246
6:00 AM	14		6:00 PM	23		6:00 AM	2		6:00 PM	40		6:00 AM	16		6:00 PM	63	
6:15 AM	14		6:15 PM	13		6:15 AM	6		6:15 PM	33		6:15 AM	20		6:15 PM	46	
6:30 AM	21		6:30 PM	20		6:30 AM	6		6:30 PM	23		6:30 AM	27		6:30 PM	43	
6:45 AM	26	75	6:45 PM	9	65	6:45 AM	21	35	6:45 PM	18	114	6:45 AM	47	110	6:45 PM	27	179
7:00 AM	27		7:00 PM	15		7:00 AM	19		7:00 PM	22		7:00 AM	46		7:00 PM	37	
7:15 AM	45		7:15 PM	22		7:15 AM	44		7:15 PM	16		7:15 AM	89		7:15 PM	38	
7:30 AM	36		7:30 PM	11		7:30 AM	39		7:30 PM	21		7:30 AM	75		7:30 PM	32	
7:45 AM	31	139	7:45 PM	18	66	7:45 AM	27	129	7:45 PM	11	70	7:45 AM	58	268	7:45 PM	29	136
8:00 AM	25		8:00 PM	19		8:00 AM	26		8:00 PM	15		8:00 AM	51		8:00 PM	34	
8:15 AM	22		8:15 PM	20		8:15 AM	33		8:15 PM	16		8:15 AM	55		8:15 PM	36	
8:30 AM	25		8:30 PM	14		8:30 AM	14		8:30 PM	6		8:30 AM	39		8:30 PM	20	
8:45 AM	27	99	8:45 PM	5	58	8:45 AM	30	103	8:45 PM	6	43	8:45 AM	57	202	8:45 PM	11	101
9:00 AM	19		9:00 PM	9		9:00 AM	12		9:00 PM	14		9:00 AM	31		9:00 PM	23	
9:15 AM	21		9:15 PM	7		9:15 AM	15		9:15 PM	15		9:15 AM	36		9:15 PM	22	
9:30 AM	21		9:30 PM	7		9:30 AM	13		9:30 PM	7		9:30 AM	34		9:30 PM	14	
9:45 AM	20	81	9:45 PM	5	28	9:45 AM	18	58	9:45 PM	9	45	9:45 AM	38	139	9:45 PM	14	73
10:00 AM	14		10:00 PM	6		10:00 AM	17		10:00 PM	4		10:00 AM	31		10:00 PM	10	
10:15 AM	14		10:15 PM	6		10:15 AM	16		10:15 PM	10		10:15 AM	30		10:15 PM	16	
10:30 AM	12		10:30 PM	3		10:30 AM	18		10:30 PM	9		10:30 AM	30		10:30 PM	12	
10:45 AM	14	54	10:45 PM	5	20	10:45 AM	16	67	10:45 PM	3	26	10:45 AM	30	121	10:45 PM	8	46
11:00 AM	18		11:00 PM	5		11:00 AM	24		11:00 PM	3		11:00 AM	42		11:00 PM	8	
11:15 AM	15		11:15 PM	4		11:15 AM	18		11:15 PM	5		11:15 AM	33		11:15 PM	9	
11:30 AM	23		11:30 PM	0		11:30 AM	20		11:30 PM	2		11:30 AM	43		11:30 PM	2	
11:45 AM	24	80	11:45 PM	0	9	11:45 AM	21	83	11:45 PM	0	10	11:45 AM	45	163	11:45 PM	0	19
Total	596			853		Total	509			1050		Total	1105			1903	
Percent	41.13%			58.87%		Percent	32.65%			67.35%		Percent	36.74%			63.26%	
Day Total			1449			Day Total			1559			Day Total			3008		
Peak Hour	7:00 AM			2:00 PM		Peak Hour	7:15 AM			4:00 PM		Peak Hour	7:15 AM			3:45 PM	
Volume	139			137		Volume	136			177		Volume	273			272	
P.H.F.	0.772			0.835		P.H.F.	0.773			0.763		P.H.F.	0.767			0.919	

Walnut Street
west of Route 140
City, State: Foxborough, MA
Client: W&S/J. Santacruce
Site Code: ENG22-0467

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 228636 ATR-A

Count Date
Wednesday, June 1, 2022

Speed (60-minute)

EB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	2	35.6	34.5
1:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26.0	26.0
2:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	3	31.8	29.7
3:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	3	37.4	34.7
4:00 AM	0	0	1	0	5	8	0	1	0	0	0	0	0	15	37.8	34.7
5:00 AM	0	0	0	3	14	17	10	0	0	0	0	0	0	44	40.0	35.7
6:00 AM	0	0	0	6	25	33	9	1	1	0	0	0	0	75	39.0	35.3
7:00 AM	0	0	0	4	36	80	18	1	0	0	0	0	0	139	39.0	36.2
8:00 AM	0	0	1	7	33	41	17	0	0	0	0	0	0	99	40.0	35.2
9:00 AM	0	0	1	8	34	33	4	1	0	0	0	0	0	81	38.0	34.0
10:00 AM	0	0	0	3	26	17	8	0	0	0	0	0	0	54	39.1	34.7
11:00 AM	0	0	0	2	31	32	13	2	0	0	0	0	0	80	40.2	35.7
12:00 PM	0	0	1	10	34	20	9	3	0	0	0	0	0	77	39.6	34.2
1:00 PM	0	0	0	11	34	32	10	0	0	0	0	0	0	87	38.0	34.3
2:00 PM	0	0	1	14	54	59	8	1	0	0	0	0	0	137	38.0	34.4
3:00 PM	0	0	0	13	41	44	7	1	1	0	0	0	0	107	39.0	34.3
4:00 PM	0	0	0	3	31	46	9	2	0	1	0	0	0	92	39.0	35.9
5:00 PM	0	0	1	11	41	46	7	1	0	0	0	0	0	107	38.0	34.4
6:00 PM	0	0	0	1	20	36	8	0	0	0	0	0	0	65	39.0	35.5
7:00 PM	0	0	1	2	35	24	4	0	0	0	0	0	0	66	37.3	34.2
8:00 PM	0	0	1	2	27	23	3	1	1	0	0	0	0	58	38.0	34.7
9:00 PM	0	0	0	2	16	8	1	1	0	0	0	0	0	28	37.9	34.3
10:00 PM	0	0	1	0	11	5	3	0	0	0	0	0	0	20	39.2	34.3
11:00 PM	0	0	0	0	3	5	1	0	0	0	0	0	0	9	38.6	36.1
Total	0	0	9	105	554	612	149	16	3	1	0	0	0	1449	39.0	34.9
Percent	0.00%	0.00%	0.62%	7.25%	38.23%	42.24%	10.28%	1.10%	0.21%	0.07%	0.00%	0.00%	0.00%			
AM Peak			4:00 AM	9:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	6:00 AM					7:00 AM		
Volume	0	0	1	8	36	80	18	2	1	0	0	0	0	139		
PM Peak			12:00 PM	2:00 PM	2:00 PM	2:00 PM	1:00 PM	12:00 PM	3:00 PM	4:00 PM				2:00 PM		
Volume	0	0	1	14	54	59	10	3	1	1	0	0	0	137		

15th Percentile:	31.0 MPH	Average Speed:	34.9 MPH	Posted Speed Limit:	35 MPH
50th Percentile:	35.0 MPH	10 MPH Pace:	30 to 39 MPH	Number of Vehicles > 35 MPH:	602
85th Percentile:	39.0 MPH	Number in Pace:	1166	Percent of Vehicles > 35 MPH:	41.5%
95th Percentile:	42.0 MPH	Percent in Pace:	80.5%		

Walnut Street
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Site Code: ENG22-0467

D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File #: 228636 ATR-A

Count Date
Wednesday, June 1, 2022

Speed (60-minute)

WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	1	2	1	0	0	0	0	0	0	0	0	6	28.8	23.8
1:00 AM	0	0	0	1	2	0	0	0	0	0	0	0	0	3	33.1	30.7
2:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	23.0	23.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	1	1	2	1	0	0	0	0	0	0	0	5	34.2	29.6
5:00 AM	0	0	1	4	11	2	1	0	0	0	0	0	0	19	34.6	32.2
6:00 AM	0	0	2	9	16	8	0	0	0	0	0	0	0	35	37.0	31.3
7:00 AM	0	0	2	19	62	40	4	2	0	0	0	0	0	129	36.0	33.2
8:00 AM	0	0	1	17	53	23	8	1	0	0	0	0	0	103	36.7	33.1
9:00 AM	0	0	2	15	19	18	4	0	0	0	0	0	0	58	37.5	32.5
10:00 AM	0	0	1	14	41	11	0	0	0	0	0	0	0	67	35.0	31.7
11:00 AM	0	1	4	7	35	25	10	1	0	0	0	0	0	83	39.0	33.9
12:00 PM	0	2	8	22	26	17	3	0	0	0	0	0	0	78	37.0	30.5
1:00 PM	1	4	12	28	28	14	5	0	1	0	0	0	0	93	37.0	29.6
2:00 PM	0	0	0	19	61	28	5	0	0	0	0	0	0	113	37.0	32.8
3:00 PM	0	0	4	37	51	40	10	0	0	0	0	0	0	142	38.0	32.5
4:00 PM	0	0	3	18	70	64	18	4	0	0	0	0	0	177	39.0	34.3
5:00 PM	0	3	1	20	59	49	7	0	0	0	0	0	0	139	37.0	33.3
6:00 PM	0	0	1	12	54	35	11	0	0	1	0	0	0	114	38.0	34.0
7:00 PM	0	0	0	8	31	26	4	1	0	0	0	0	0	70	37.7	33.9
8:00 PM	0	0	1	13	20	9	0	0	0	0	0	0	0	43	35.7	31.4
9:00 PM	0	1	0	13	20	7	4	0	0	0	0	0	0	45	36.4	31.8
10:00 PM	0	0	4	11	6	4	0	1	0	0	0	0	0	26	36.0	29.5
11:00 PM	0	0	1	3	4	1	1	0	0	0	0	0	0	10	36.0	31.5
Total	1	13	51	293	672	422	95	10	1	1	0	0	0	1559	37.0	32.7
Percent	0.06%	0.83%	3.27%	18.79%	43.10%	27.07%	6.09%	0.64%	0.06%	0.06%	0.00%	0.00%	0.00%			
AM Peak		12:00 AM	11:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	7:00 AM						7:00 AM		
Volume	0	2	4	19	62	40	10	2	0	0	0	0	0	129		
PM Peak	1:00 PM	1:00 PM	1:00 PM	3:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	1:00 PM	6:00 PM				4:00 PM		
Volume	1	4	12	37	70	64	18	4	1	1	0	0	0	177		

15th Percentile:	28.0 MPH	Average Speed:	32.7 MPH	Posted Speed Limit:	35 MPH
50th Percentile:	33.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 35 MPH:	420
85th Percentile:	37.0 MPH	Number in Pace:	1168	Percent of Vehicles > 35 MPH:	26.9%
95th Percentile:	40.0 MPH	Percent in Pace:	74.9%		

Walnut Street
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PDI File #: 228636 ATR-A

Count Date
Wednesday, June 1, 2022

Speed (60-minute)

Combined EB and WB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	2	1	2	2	1	0	0	0	0	0	0	0	8	32.9	26.5
1:00 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	4	32.7	29.5
2:00 AM	0	0	1	2	1	0	0	0	0	0	0	0	0	4	31.2	28.0
3:00 AM	0	0	0	0	1	2	0	0	0	0	0	0	0	3	37.4	34.7
4:00 AM	0	0	2	1	7	9	0	1	0	0	0	0	0	20	36.3	33.5
5:00 AM	0	0	1	7	25	19	11	0	0	0	0	0	0	63	40.0	34.6
6:00 AM	0	0	2	15	41	41	9	1	1	0	0	0	0	110	38.0	34.0
7:00 AM	0	0	2	23	98	120	22	3	0	0	0	0	0	268	38.0	34.8
8:00 AM	0	0	2	24	86	64	25	1	0	0	0	0	0	202	39.0	34.1
9:00 AM	0	0	3	23	53	51	8	1	0	0	0	0	0	139	38.0	33.4
10:00 AM	0	0	1	17	67	28	8	0	0	0	0	0	0	121	37.0	33.1
11:00 AM	0	1	4	9	66	57	23	3	0	0	0	0	0	163	40.0	34.8
12:00 PM	0	2	9	32	60	37	12	3	0	0	0	0	0	155	38.0	32.3
1:00 PM	1	4	12	39	62	46	15	0	1	0	0	0	0	180	38.0	31.9
2:00 PM	0	0	1	33	115	87	13	1	0	0	0	0	0	250	38.0	33.6
3:00 PM	0	0	4	50	92	84	17	1	1	0	0	0	0	249	38.0	33.3
4:00 PM	0	0	3	21	101	110	27	6	0	1	0	0	0	269	39.0	34.9
5:00 PM	0	3	2	31	100	95	14	1	0	0	0	0	0	246	37.0	33.8
6:00 PM	0	0	1	13	74	71	19	0	0	1	0	0	0	179	38.3	34.6
7:00 PM	0	0	1	10	66	50	8	1	0	0	0	0	0	136	37.8	34.0
8:00 PM	0	0	2	15	47	32	3	1	1	0	0	0	0	101	37.0	33.3
9:00 PM	0	1	0	15	36	15	5	1	0	0	0	0	0	73	37.0	32.7
10:00 PM	0	0	5	11	17	9	3	1	0	0	0	0	0	46	37.0	31.6
11:00 PM	0	0	1	3	7	6	2	0	0	0	0	0	0	19	37.6	33.7
Total	1	13	60	398	1226	1034	244	26	4	2	0	0	0	3008	38.0	33.7
Percent	0.03%	0.43%	1.99%	13.23%	40.76%	34.38%	8.11%	0.86%	0.13%	0.07%	0.00%	0.00%	0.00%			
AM Peak		12:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM	8:00 AM	7:00 AM	6:00 AM					7:00 AM		
Volume	0	2	4	24	98	120	25	3	1	0	0	0	0	268		
PM Peak	1:00 PM	1:00 PM	1:00 PM	3:00 PM	2:00 PM	4:00 PM	4:00 PM	4:00 PM	1:00 PM	4:00 PM				4:00 PM		
Volume	1	4	12	50	115	110	27	6	1	1	0	0	0	269		

15th Percentile:	29.0 MPH	Average Speed:	33.7 MPH	Posted Speed Limit:	35 MPH
50th Percentile:	34.0 MPH	10 MPH Pace:	29 to 38 MPH	Number of Vehicles > 35 MPH:	1022
85th Percentile:	38.0 MPH	Number in Pace:	2266	Percent of Vehicles > 35 MPH:	34.0%
95th Percentile:	41.0 MPH	Percent in Pace:	75.3%		

SEASONAL ADJUSTMENT FACTOR

Massachusetts Highway Department
Statewide Traffic Data Collection
2019 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.22	1.14	1.12	1.06	1.00	0.96	0.87	0.85	0.96	0.99	1.04	1.12	0.85
R2	0.95	0.96	0.98	0.97	0.97	0.93	0.97	0.94	0.96	0.90	0.92	0.93	0.96
R3	1.15	1.06	1.07	1.00	0.89	0.88	0.89	0.89	0.95	0.92	1.02	1.01	0.97
R4-R7	1.09	1.09	1.11	1.02	0.96	0.92	0.89	0.89	0.99	0.98	1.09	1.13	0.98
U1-Boston	1.03	1.01	0.98	0.94	0.94	0.92	0.95	0.93	0.94	0.94	0.97	1.04	0.96
U1-Essex	1.09	1.06	1.03	0.99	0.94	0.90	0.88	0.86	0.93	0.94	0.99	1.06	0.93
U1-Southeast	1.06	1.05	1.01	0.97	0.95	0.93	0.93	0.90	0.94	0.94	0.98	1.04	0.98
U1-West	1.19	1.14	1.09	0.95	0.92	0.89	0.89	0.86	0.91	0.95	0.97	1.07	0.84
U1-Worcester	1.02	1.04	0.97	0.94	0.93	0.91	0.95	0.91	0.93	0.92	0.95	1.10	0.88
U2	1.01	1.00	0.94	0.93	0.91	0.89	0.93	0.90	0.90	0.91	0.94	1.02	0.99
U3	1.06	1.03	0.98	0.94	0.93	0.91	0.95	0.91	0.92	0.93	0.97	1.00	0.98
U4-U7	1.01	1.00	0.95	0.92	0.88	0.86	0.92	0.91	0.92	0.94	0.99	1.04	0.99
Rec - East	1.04	1.16	1.12	0.98	0.92	0.88	0.77	0.81	0.94	1.02	1.08	1.12	0.99
Rec - West	1.30	1.23	1.32	1.18	0.95	0.82	0.70	0.69	0.97	0.96	1.16	1.15	0.98

Round off:
0-999 = 10
>1000 = 100

U = Urban
R = Rural

1 - Interstate
2 - Freeway and Expressway
3 - Other Principal Arterial
4 - Minor Arterial
5 - Major Collector
6 - Minor Collector
7 - Local Road and Street

Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations 7014,7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108 and 7178), Martha's Vineyard and Nantucket.

Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113,1114,1116,2196,2197 and 2198.

6/6/2022

TRAFFIC GROWTH DATA

Efiong, Offi

From: Paige Duncan <PDuncan@foxboroughma.gov>
Sent: Tuesday, June 28, 2022 1:24 PM
To: Efiong, Offionganwan
Subject: RE: Information On Walnut Street and Commercial Street

Please see below

From: Liz Oltman <LOltman@theengineeringcorp.com>
Sent: Tuesday, June 28, 2022 1:18 PM
To: Chris Gallagher <CGallagher@foxboroughma.gov>; Paige Duncan <PDuncan@foxboroughma.gov>; Lance E. DelPriore <LDelPriore@foxboroughma.gov>
Cc: Mikel Myers <MMyers@theengineeringcorp.com>
Subject: RE: Information On Walnut Street and Commercial Street

Hi Paige,
To add to the below – MassDOT approved the 1.8% growth rate, so that should remain appropriate for the background growth.
Best,
Liz

From: Paige Duncan <>
Sent: Tuesday, June 28, 2022 12:47 PM
To: 'Efiong, Offionganwan' <Efiong.Offionganwan@wseinc.com>
Subject: RE: Information On Walnut Street and Commercial Street

Offie,

We are not aware of any current or pending projects near those two intersections.

Here are the other answers from our DPW Director:

- I believe the that is the latest plan set as we've been waiting for funding to bring the design to completion.
- Growth rate is outside of my purview.
- The timing and phasing in that plan set should be the latest.
- The intersection will be reconstructed when funding is available.

I also sent your questions to TEC (Mike Myers and Liz Oltman), I'm hoping they will respond on growth rate.

I hope this helps.

~Paige Duncan

_____
Paige E. Duncan, AICP

Director of Land Use and Economic Development
Town of Foxborough
40 South Street
Foxborough, MA 02035
W: 508.543.1250
F: 508.543.6278
pduncan@foxboroughma.gov
www.foxboroughma.gov/planning

From: Efiong, Offionganwan <Efiong.Offionganwan@wseinc.com>
Sent: Tuesday, June 28, 2022 10:04 AM
To: Paige Duncan <PDuncan@foxboroughma.gov>
Subject: Information On Walnut Street and Commercial Street

Good Morning Paige,
I am Offionganwan Efiong, you can call me Offie,
Weston & Sampson is currently preparing a Traffic Impact Assessment report for the Foxborough housing authority for a new housing development and we are analyzing two intersections;
Commercial Street and Walnut Street,
N High street and Walnut Street.

- Is there going to be any approved new developments or new developments in the planning process within these two intersections?

I got a hold of an FDR for Commercial Street and Walnut Street Intersection Improvements with revision dated June 11th 2021 and Plan Set labelled 75% / 100% submittal dated 8/04/2021.

- Is this the latest FDR and plan set for the project?
- Can we make use of the 1.8% compounded annual growth rate, or is there a specific growth rate you would prefer?
- Can we make use of the traffic signal timing and phasing plan within the plan set or do you have a later revision or a preferred timing and phasing plan?
- Is the built year still expected to be 2027?

Thank you
Best regards

CRASH DATA

Crash Number	Crash Severity	Crash Year	Light Conditions	Manner of Collision	Road Surfa	Weather Conditions	Roadway
4379709	Non-fatal injury	2017	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4422516	Non-fatal injury	2017	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4379692	Property damage only	2017	Dark - lighted roadway	Angle	Dry	Clear	COMMERCIAL ST
4422625	Property damage only	2017	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4422633	Property damage only	2017	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4452723	Property damage only	2017	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4422674	Non-fatal injury	2017	Dark - roadway not lighted	Head-on	Dry	Clear	COMMERCIAL ST
4379741	Non-fatal injury	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4422727	Non-fatal injury	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4470162	Non-fatal injury	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4379696	Property damage only	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4379749	Property damage only	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4452721	Property damage only	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4470144	Property damage only	2017	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4470147	Property damage only	2017	Dark - lighted roadway	Rear-end	Dry	Clear	COMMERCIAL ST
4422623	Property damage only	2017	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST
4379743	Property damage only	2017	Dark - lighted roadway	Sideswipe	Dry	Clear	COMMERCIAL ST / WALNUT ST
4379710	Property damage only	2017	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST
4379679	Property damage only	2017	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4379702	Property damage only	2017	Daylight	Single vehicle crash	Dry	Clear	WALNUT ST
4423656	Property damage only	2017	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4452560	Property damage only	2017	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4470137	Property damage only	2017	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST
4470111	Non-fatal injury	2017	Daylight	Angle	Dry	Cloudy	COMMERCIAL ST
4491832	Property damage only	2017	Daylight	Angle	Dry	Cloudy	COMMERCIAL ST
4452554	Property damage only	2017	Daylight	Sideswipe	Dry	Cloudy	COMMERCIAL ST
4452730	Property damage only	2017	Daylight	Rear-end	Wet	Cloudy	COMMERCIAL ST
4379745	Non-fatal injury	2017	Daylight	Angle	Wet	Cloudy	COMMERCIAL ST
4379706	Non-fatal injury	2017	Dark - lighted roadway	Rear-end	Wet	Cloudy	COMMERCIAL ST
4563095	Non-fatal injury	2018	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4603694	Non-fatal injury	2018	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4563056	Property damage only	2018	Dark - roadway not lighted	Angle	Dry	Clear	COMMERCIAL ST / WALNUT ST
4603761	Property damage only	2018	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4563096	Non-fatal injury	2018	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4562917	Property damage only	2018	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4603704	Property damage only	2018	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4691350	Property damage only	2018	Dark - lighted roadway	Rear-end	Dry	Clear	COMMERCIAL ST
4603689	Non-fatal injury	2018	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST
4603987	Non-fatal injury	2018	Daylight	Sideswipe	Dry	Clear	WALNUT ST
4563028	Property damage only	2018	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST
4603754	Property damage only	2018	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST
4628339	Property damage only	2018	Daylight	Sideswipe	Dry	Clear	COMMERCIAL ST / WALNUT ST
4603759	Non-fatal injury	2018	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST / WALNUT ST
4562918	Property damage only	2018	Daylight	Single vehicle crash	Dry	Clear	NORTH HIGH ST
4628266	Property damage only	2018	Dark - lighted roadway	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4628340	Property damage only	2018	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4562951	Property damage only	2018	Daylight	Unknown	Dry	Clear	COMMERCIAL ST
4562934	Property damage only	2018	Daylight	Angle	Dry	Clear	COMMERCIAL ST / WALNUT ST

4628351	Property damage only	2018	Dark - lighted roadway	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4563030	Property damage only	2018	Dark - lighted roadway	Rear-end	Dry	Clear	COMMERCIAL ST
4563022	Property damage only	2018	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4628272	Property damage only	2018	Daylight	Angle	Dry	Cloudy	COMMERCIAL ST
4563084	Property damage only	2018	Daylight	Sideswipe	Dry	Cloudy	COMMERCIAL ST
4562913	Property damage only	2018	Daylight	Sideswipe	Dry	Cloudy	COMMERCIAL ST
4563262	Property damage only	2018	Daylight	Sideswipe	Dry	Cloudy	COMMERCIAL ST
4563051	Property damage only	2018	Dark - lighted roadway	Single vehicle crash	Wet	Clear	COMMERCIAL ST
4563065	Property damage only	2018	Daylight	Rear-end	Wet	Cloudy	COMMERCIAL ST
4563058	Non-fatal injury	2018	Daylight	Rear-end	Wet	Cloudy	NORTH HIGH ST
4562945	Non-fatal injury	2018	Dark - lighted roadway	Rear-end	Wet	Cloudy	COMMERCIAL ST
4563108	Property damage only	2018	Dark - lighted roadway	Angle	Wet	Cloudy	COMMERCIAL ST / WALNUT ST
4727499	Non-fatal injury	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4782143	Non-fatal injury	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4691481	Property damage only	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4708883	Property damage only	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4708921	Property damage only	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4761117	Property damage only	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4785747	Property damage only	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST
4789125	Property damage only	2019	Dark - lighted roadway	Angle	Dry	Clear	COMMERCIAL ST
4691380	Unknown	2019	Daylight	Angle	Dry	Clear	COMMERCIAL ST / WALNUT ST
4725494	Non-fatal injury	2019	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4726363	Non-fatal injury	2019	Daylight	Rear-end	Dry	Clear	COMMERCIAL ST
4779781	Non-fatal injury	2019	Dark - lighted roadway	Rear-end	Dry	Clear	COMMERCIAL ST
4678534	Property damage only	2019	Dark - lighted roadway	Rear-end	Dry	Clear	COMMERCIAL ST
4773596	Property damage only	2019	Dark - lighted roadway	Sideswipe	Dry	Clear	COMMERCIAL ST
4691486	Property damage only	2019	Daylight	Single vehicle crash	Dry	Clear	WALNUT ST
4745879	Property damage only	2019	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4736758	Property damage only	2019	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4778267	Property damage only	2019	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4766537	Unknown	2019	Daylight	Single vehicle crash	Dry	Clear	COMMERCIAL ST
4709031	Property damage only	2019	Daylight	Angle	Dry	Cloudy	COMMERCIAL ST
4708903	Property damage only	2019	Daylight	Sideswipe	Dry	Cloudy	COMMERCIAL ST
4709029	Property damage only	2019	Daylight	Single vehicle crash	Dry	Cloudy	COMMERCIAL ST
4789124	Property damage only	2019	Daylight	Single vehicle crash	Wet	Clear	WALNUT ST
4782141	Property damage only	2019	Dark - lighted roadway	Rear-end	Wet	Clear	COMMERCIAL ST
4779783	Non-fatal injury	2019	Daylight	Rear-end	Wet	Cloudy	COMMERCIAL ST
4708893	Property damage only	2019	Daylight	Angle	Wet	Cloudy	COMMERCIAL ST
4766539	Property damage only	2019	Daylight	Rear-end	Wet	Cloudy	COMMERCIAL ST
4708896	Property damage only	2019	Dark - lighted roadway	Single vehicle crash	Wet	Cloudy	COMMERCIAL ST

Data Level:
Query Type:
Criteria:

Data Level: CRASH
Query Type: Basic
Criteria: If you conducted an Advanced Query your SQL statement will be listed here

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Foxborough COUNT DATE : 6/1/2022

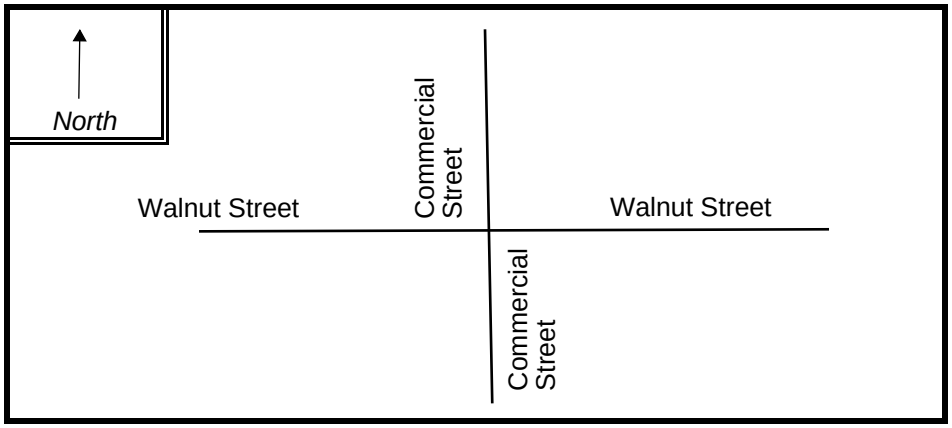
DISTRICT : 4 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Commercial Street

MINOR STREET(S) : Walnut Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	N	S	E	W		
PEAK HOURLY VOLUMES (AM/PM) :	818	1043	18	137		2016

" K " FACTOR : 9

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 22400

TOTAL # OF CRASHES : 7

OF YEARS : 3

AVERAGE # OF CRASHES PER YEAR (**A**) : 2.3

CRASH RATE CALCULATION : 0.28

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments :

Project Title & Date: Foxborough Affordable Housing Development 9/24/2022

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Foxborough COUNT DATE : 6/1/2022

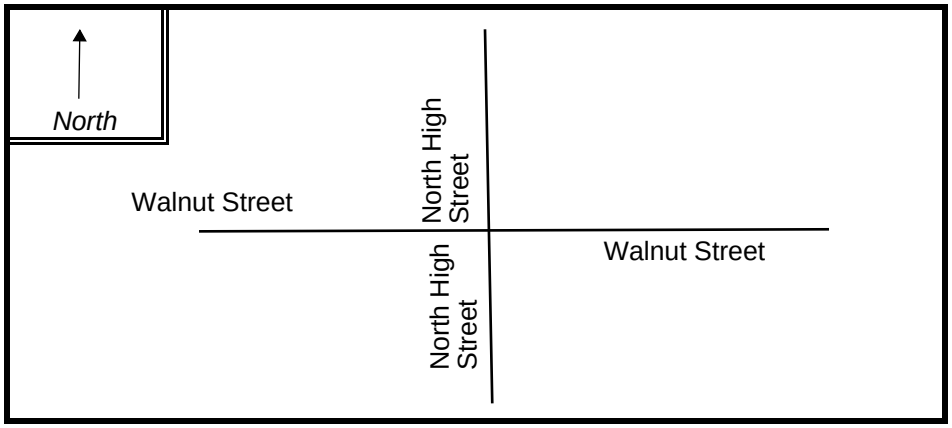
DISTRICT : 4 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Walnut Street

MINOR STREET(S) : North High Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	N	S	E	W		
PEAK HOURLY VOLUMES (AM/PM) :	37	11	135	103		286

" K " FACTOR : 10

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 2860

TOTAL # OF CRASHES : 0

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : 0

CRASH RATE CALCULATION : 0.0

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments :

Project Title & Date: Foxborough Affordable Housing Development 9/24/2022

TRIP GENERATION

Senior Adult Housing - Multifamily
(252)

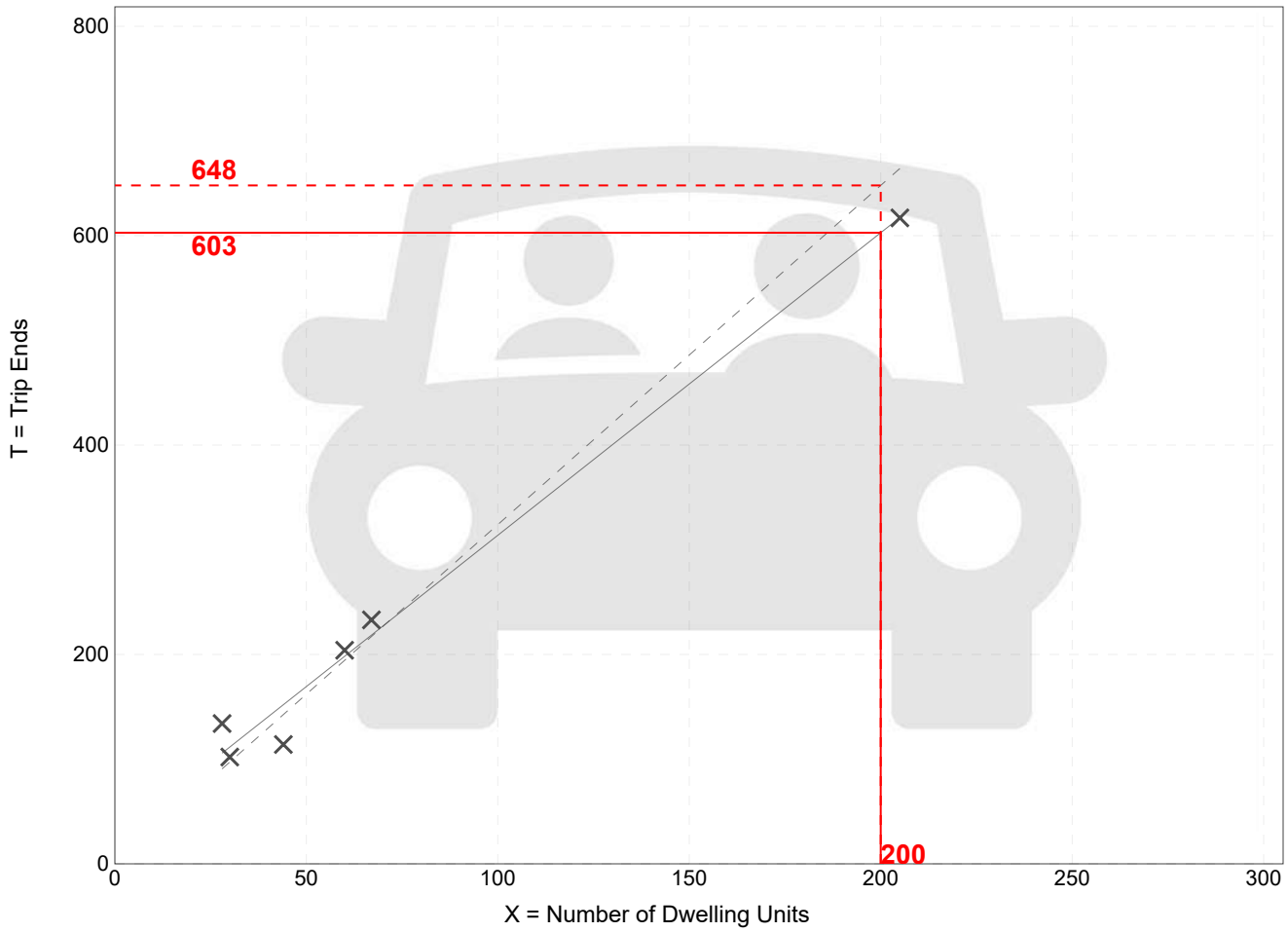
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Dwelling Units: 72
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
3.24	2.59 - 4.79	0.53

Data Plot and Equation



Fitted Curve Equation: T = 2.89(X) + 24.82

R^2= 0.99

Senior Adult Housing - Multifamily
(252)

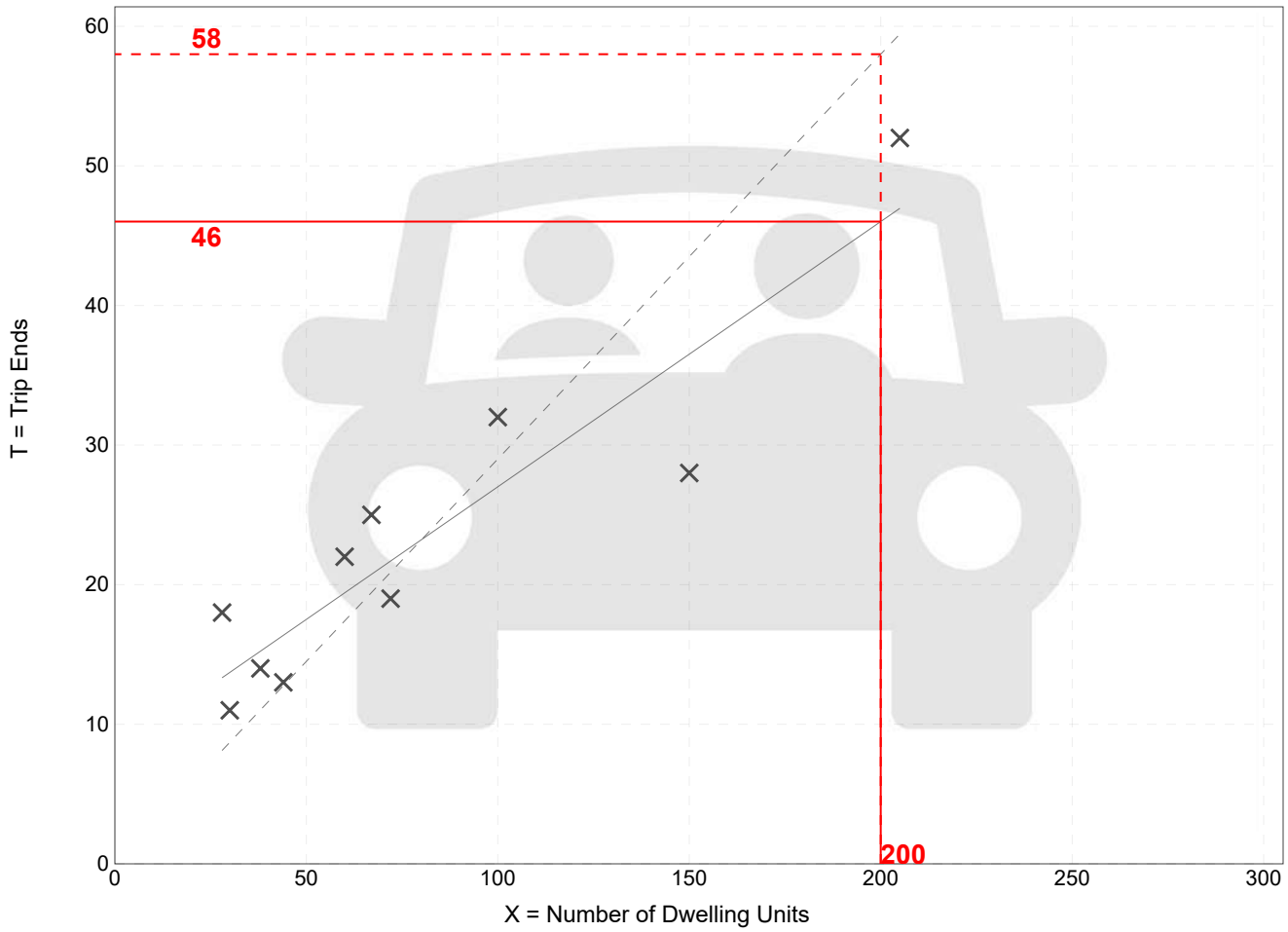
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 10
Avg. Num. of Dwelling Units: 79
Directional Distribution: 45% entering, 55% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.29	0.19 - 0.64	0.10

Data Plot and Equation



Fitted Curve Equation: T = 0.19(X) + 8.01

R^2= 0.85

Senior Adult Housing - Multifamily
(252)

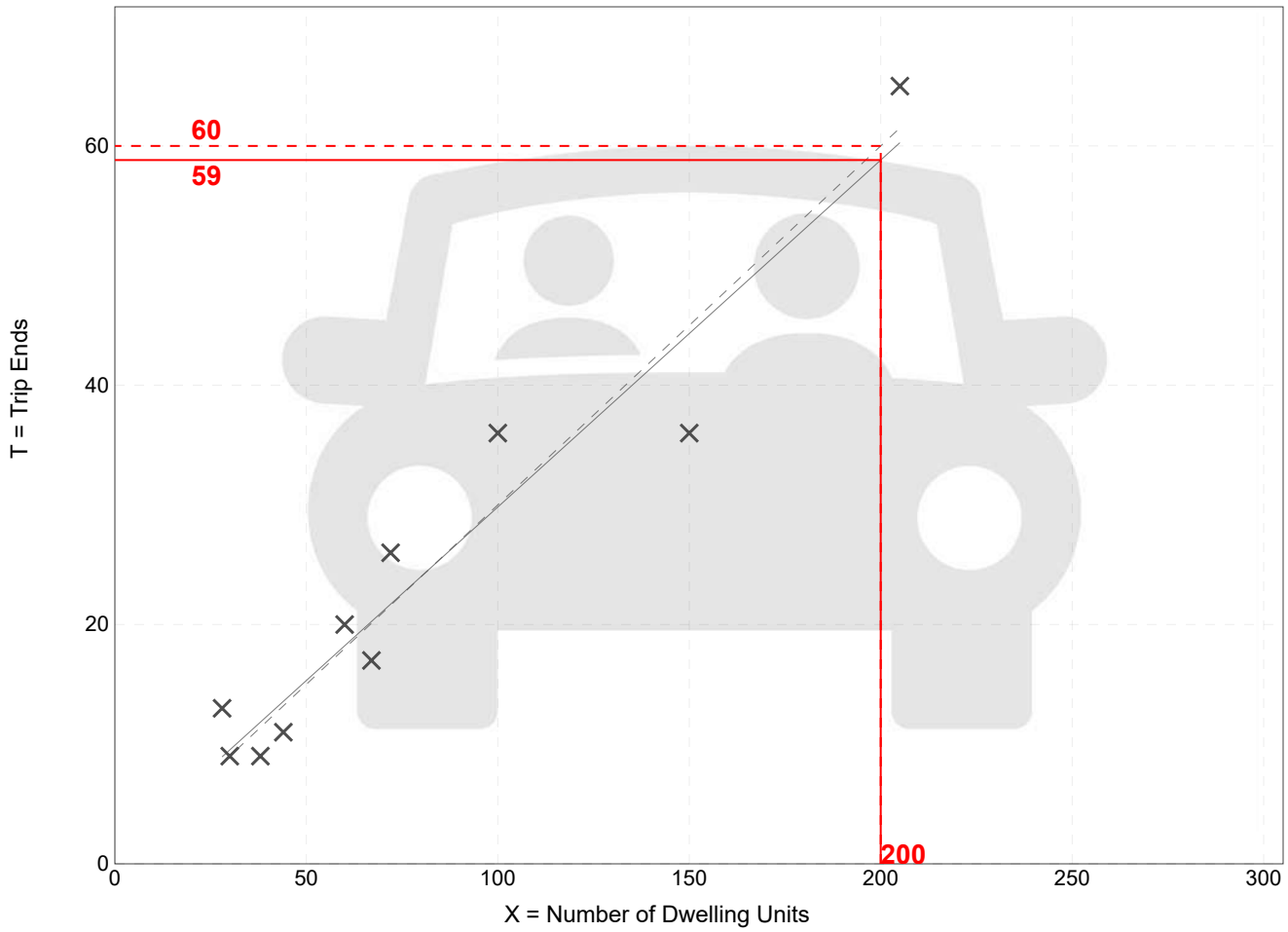
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **General Urban/Suburban**
Number of Studies: 10
Avg. Num. of Dwelling Units: 79
Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.30	0.24 - 0.46	0.06

Data Plot and Equation



Fitted Curve Equation: T = 0.29(X) + 0.82

R^2= 0.93

TEC FUNCTIONAL DESIGN REPORT

Project Framework Document
Functional Design Report

Commercial Street (Route 140) at Walnut Street Intersection Improvements

Foxborough, Massachusetts

Prepared for: **Massachusetts Department of Transportation**
Highway Division – District 5
1000 County Street
Taunton, Massachusetts 02780

Federal Highway Administration
Massachusetts Division
55 Broadway 10th Floor
Cambridge, Massachusetts 012142

Town of Foxborough, Massachusetts
40 South Street #1
Foxborough, Massachusetts 02035

Prepared by: **TEC, Inc.**
146 Dascomb Road
Andover, Massachusetts 01810

I have reviewed this document as it relates to the proposed design and have determined the design to be safe for public health and welfare in conformity with accepted engineering standards.

COMMONWEALTH OF MASSACHUSETTS
SAMUEL W. GREGORIO
CIVIL
No. 51109
REGISTERED PROFESSIONAL ENGINEER

Samuel W. Gregorio, PE, PTOE, RSP$_1$

June 24, 2020
Revised June 11, 2021

provided along Walnut Street, west of the intersection. The site's trip generation was estimated based on standard trip rates published in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition* for Land Use Code (LUC) 220 – Multifamily Housing (Low-Rise). The project is expected to add 115 and 140 new vehicle trips during the weekday morning peak and weekday evening peak hours, respectively. The trips were distributed on the roadway network using 2009-2013 US Census Journey-to-Work data. The trip generation and distribution calculations for this development is included in Appendix E.

Future Year Traffic Volumes

The 2027 Future Year Conditions traffic volumes were obtained by applying a 1.8 percent compounded annual growth rate to the 2020 Base Year Condition traffic volumes over the 7-year design horizon period and adding trips to be generated by the proposed residential development along Walnut Street. The resulting 2027 Future Year Conditions Weekday morning and evening traffic volume networks are presented in Figure 3.

The 2040 Future Year Conditions traffic volumes were then obtained by applying the compounded annual growth rate over an additional 13 years from the 2027 Future Year Conditions. The 2040 Future Year Conditions Weekday morning and evening traffic volume networks are presented in Figure 4.

VI. TRAFFIC WARRANTS

MUTCD SIGNAL WARRANTS

A traffic signal warrant analysis was conducted at both the intersections of Commercial Street / Walnut Street and Commercial Street / I-95 SB Off-Ramp using hourly traffic volumes based on seasonally adjusted TMCs conducted in January 2020, I-95 SB Off-Ramp traffic counts conducted in April 2016, and additional traffic generated from the proposed residential development. For the purposes of the analyses, Commercial Street was designated the "major street" volume, while Walnut Street and the I-95 SB Off-Ramp were designated the "minor street".

Signal Warrant Analysis

The *MUTCD*[4] contains eight warrants for evaluating the need for installation of a traffic signal. Two (2) vehicular volume warrants were evaluated to determine whether installation of a traffic signal is justified for both the intersections of Commercial Street / Walnut Street and Commercial Street / I-95 SB Off-Ramp. These warrants include:

- Warrant 1: Eight-Hour Vehicular Volume
- Warrant 2: Four-Hour Vehicular Volume

Right Turn Reduction Justification

It is sometimes customary for a reduction in right turning traffic to be considered when applying total minor street traffic to the various traffic signal warrants. Specifically, Section 4C.01 (Paragraph 08) of the *MUTCD* states:

> *"The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgement should be used to determine what,* ***if any****, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2."*

A majority of the traffic exiting Walnut Street performs a right turn movement at the Commercial Street / Walnut Street intersection. This will be similar for additional traffic to be generated by the proposed development. Although a majority of traffic does turn right, left-turning and through movements are present at the intersection. In addition, the project proposes to narrow the approach lanes along Walnut Street for safety considerations which will force all vehicles along

[4] *Manual of Uniform Traffic Control Devices*, 2009 Edition; Federal Highway Administration; 2009

Walnut Street into one travel lane. As the approach will be one lane, left-turning and through traffic will block the ability of many right-turn movements to do so freely. TEC has reduced the right turn volume by 50 percent for the purposes of the warrants on the Walnut Street eastbound and westbound approaches to account for an ability to turn right on red; however, the given speed and nature of Commercial Street still present significant conflict for right turning vehicles on Walnut Street. No right-turn reduction was taken for the I-95 SB Off-Ramp based on the approach angle and limited sight distance from the approach under the proposed ramp alignment.

Signal Warrant Analysis

Based on the 2022 opening year traffic volumes with the additional residential development traffic at the intersection, both the intersections of Commercial Street / Walnut Street and the I-95 SB Off-Ramp meet the criteria for Warrant 1– Eight Hour Volumes and Warrant 2 – Four Hour Volumes.

The signal warrant analysis worksheets are provided in Appendix G.

LEFT TURN LANE WARRANTS

A left turn lane warrant analysis was conducted for the Commercial Street southbound approach to the intersection of Commercial Street / Walnut Street using the hourly traffic volumes from the TMCs conducted in January 2020. The potential left turn lanes were analyzed under signalized intersection conditions.

The *MassHighway Project Development and Design Guide*[5] (PDDG) defines left turn lane volume warrants at signalized intersections based on the Transportation Research Board's (TRB) publication, the *Highway Capacity Manual (HCM) 6th Edition*[6]. The criteria for signalized intersections are based on left-turn volume. Based on the signalized operating conditions on Commercial Street and Walnut Street, left turn lanes are not warranted on the southbound Commercial Street approach.

The *HCM 6th Edition* also indicates that exclusive left turn lanes at signalized intersections should be installed where exclusive left turn phasing is provided, where the lane would directly oppose another left-turn lane if needed geometrically, or for those locations where the left-turn lane would provide an extensive safety benefit. As a result of the high-speed nature of Commercial Street, it is TEC's engineering judgement that a left-turn lane is warranted for safety considerations in order to remove stopped or yielding left-turning vehicles from the same lane as high-speed through movements along Commercial Street southbound. The left turn lanes have been designed to accommodate the anticipated 95th percentile queue length.

An excerpt from the *MassHighway Project Development and Design Guide* noting the criteria for the introduction of a left turn lane by traffic volume is provided in Appendix H.

WARRANTS CONCLUSION

The improvements associated with the I-95 SB Off-ramp, propose to significantly upgrade the Commercial Street / I-95 SB Off-ramp intersection safety for traffic utilizing the off-ramp, prevent

[5] *MassHighway Project Development and Design Guide*, MassHighway (now Massachusetts Department of Transportation (MassDOT) – Highway Division); Boston, Massachusetts, 2006

[6] *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2017

queues at the proposed upstream Commercial Street / Walnut Street intersection, eliminate the weave between the two intersections, and accommodate future vehicular traffic associated with the full development of the Walnut Street Residential Housing Development. It is not expected that the Commercial Street northbound approach at the Commercial Street / Walnut Street intersection will back up to the Commercial Street / I-95 SB Off-ramp intersection; however, should an extended queue occur, the proposed traffic control signal at the Commercial Street / I-95 SB Off-ramp will be able to regulate the traffic volume at the particular approach and distribute traffic at the Commercial Street / I-95 SB Off-ramp intersection appropriately.

The provision of a traffic signal at these locations allows for safe and efficient movements for both the Commercial Street / Walnut Street and Commercial Street / I-95 SB Off-ramp intersections and provides capacity to accommodate the future traffic generated from the Walnut Street Residential Housing Development without reconstruction of the roadway and disruption of the intersection traffic flow. The eight-hour vehicle volume warrants are met in the base year condition with traffic generated from the Walnut Street Residential Housing Development. It is TEC's engineering judgement that it makes practical sense to construct the proposed traffic signal infrastructure improvements at the two study intersections.

VII. TRAFFIC IMPACT ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the project area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under 2020 Base Year Conditions, 2027 Future Year with Existing Geometry Conditions, 2027 Future Year with Proposed Geometry Conditions, 2040 Future Year with Existing Geometry Conditions, and 2040 Future Year with Proposed Geometry Conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study. Synchro 10™ software was used to perform the analysis.

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic flow conditions.[7] The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level of service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level of service (LOS) A representing the best operating conditions and LOS F representing the worst.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

Queue Length Analysis

Vehicle queue analyses are a direct measurement of an intersections ability to process vehicles under various traffic control and volume scenarios and lane use arrangements.

The vehicle queue analysis was performed using the Synchro 10™ intersection capacity analysis

[7] The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2017

software which is also based upon the methodology and procedures presented in the *HCM 6th Edition*. Synchro reports the 95th percentile queues for unsignalized intersections and both the 50th (average) and 95th percentile vehicle queues for signalized intersections, which are based on the number of vehicles that experience a delay of six seconds or more at an intersection and is a function of the traffic signal timing; vehicle arrival patterns during the analysis period; and the saturation flow rate. The 50th percentile or average vehicle queue is the average number of vehicles that are projected to be delayed by six seconds or more at the intersection under study during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only five percent of the time; or approximately three minutes out of 60 minutes during the peak one hour of the day. During the remaining 57 minutes, the vehicle queue length will be less than the 95th percentile queue length.

PARAMETERS FOR TRAFFIC IMPACT ANALYSIS

Unsignalized Intersections

The levels of service of two-way stop-controlled intersections are determined by application of a procedure described in the *HCM 6th Edition*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under and is a quantification of motorist delay associated with traffic control devices such as traffic signals and stop signs. Control delay includes the effects of initial deceleration delay approaching a stop sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *HCM 6th Edition.* Table 6 summarizes the relationship between level of service and average control delay.

Table 6 – Level of Service Criteria for Unsignalized Intersections [a]

Level of Service (v/c ≤ 1.0)	Level of Service (v/c > 1.0)	Average Control Delay (s/veh)	Description
A	F	≤10.0	LOS A represents a condition with little or no control delay to minor street traffic.
B	F	10.1 to 15.0	LOS B represents a condition with short control delays to minor street traffic.
C	F	15.1 to 25.0	LOS C represents a condition with average control delays to minor street traffic.
D	F	25.1 to 35.0	LOS D represents a condition with long control delays to minor street traffic.
E	F	35.1 to 50.0	LOS E represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
F	F	>50.0	LOS F represents a condition where minor street demand volume exceeds capacity of an approach lane, with excessive control delays resulting.

[a] Source: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington D.C.; 2017

Signalized Intersections

LOS for signalized intersections is calculated using the operational analysis methodology of the *HCM 6th Edition*. This method assesses the effects of signal type, timing, phasing, progression; vehicle mix; and geometrics on delay. LOS designations are based on the criterion of control or signal delay per vehicle. Control or signal delay can be related to driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay.

Table 7 summarizes the relationship between LOS and control delay. The tabulated control delay criterion may be applied in assigning LOS designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 7 – Level of Service Criteria for Signalized Intersections[(a)]

Level of Service (v/c ≤ 1.0)	Level of Service (v/c > 1.0)	Average Control Delay (s/veh)	Description
A	F	≤10.0	LOS A describes operations with very low control delay; most vehicles do not stop at all.
B	F	10.1 to 20.0	LOS B describes operations with relatively low control delay. However, more vehicles stop than LOS A.
C	F	20.1 to 35.0	LOS C describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	F	35.1 to 55.0	LOS D describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable, whereby motorists are not able to get through the signal on one cycle.
E	F	55.1 to 80.0	LOS E describes operations with high control delay values. Individual cycle failures are frequent occurrences.
F	F	>80.0	LOS F describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

[a] Source: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington D.C.; 2017

Freeway Merge and Diverge Ramp Junctions

LOS for merge and diverge junctions is calculated using the operational analysis methodology of the *HCM 6th Edition*. This method assesses the effects of ramp and freeway volume, as well as volume up upstream or downstream ramps within the influence area, number of lanes, the length of acceleration or deceleration lane, ramp and freeway free-flow speed, and other such measures such as driver type. LOS designations are based on the criterion of density in terms of passenger cars per mile per lane (pcpmpln). Density can be related to driver discomfort, frustration, and fuel consumption. Table 8 summarizes the relationship between LOS and density. The tabulated density criterion may be applied in assigning LOS designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 8 – Level of service Criteria for Ramp Junctions[(a)]

Level of Service	Density (pcpmpln)	Description
A	≤10.0	*LOS A* describes operations with very low density; unrestricted operations.
B	10.1 to 20.0	*LOS B* describes operations with relatively low density. Merging and diverging maneuvers are noticeable to drivers.
C	20.1 to 28.0	*LOS C* describes operations with higher densities. The vehicle speeds within the influence areas begin to decline as a result of merge / diverge maneuvers.
D	28.1 to 35.0	*LOS D* describes operations with densities in the range where the influence area turbulence becomes intrusive.
E	>35.0	*LOS E* describes operations with high densities. Turbulence is felt by all drivers.
F	Demand Exceeds Capacity	*LOS F* describes operations with high densities where ramp and freeway ramp queues form.

[a] Source: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington D.C.; 2017

TRAFFIC IMPACT ANALYSIS RESULTS

Capacity and queue analyses were conducted for the 2020 Base Year Conditions, 2027 Future Year with Existing Geometry Conditions, 2027 Future Year with Proposed Geometry Conditions, 2040 Future Year with Existing Geometry, and 2040 Future Year with Proposed Geometry Conditions for the intersections of Commercial Street / Walnut Street and Commercial Street / I-95 SB Off-ramp. The results of the intersection capacity and queue analyses are summarized in Table 9. The capacity analysis worksheets are provided in Appendix I. Additionally, weekday morning and weekday evening queue diagrams for 2020 Base Year Conditions, 2027 Future Year with Existing Geometry Conditions, and 2027 Future Year with Proposed Geometry Conditions are provided in Figures 5-7.

Commercial Street / Walnut Street

In 2027 Future Year with Existing Conditions, the Walnut Street eastbound and westbound approaches are expected to continue operating at degraded levels of service (LOS) F for both the weekday morning and evening peak periods with volume-to-capacity (v/c) ratios far in excess of 1.00 for the eastbound and westbound movements. With the proposed geometry and signalization of the intersection, the Walnut Street eastbound and westbound approaches are expected to significantly improve to LOS D or E; respectively. Additionally, the v/c ratios are expected to improve significantly and operate below 1.00. The Commercial Street mainline will not greatly be affected by the additional of the traffic signal control with through movements both northbound and southbound operating at acceptable levels of service (LOS C or better). The signal timings have been programmed to limit the green time for movements with limited traffic volumes; therefore, the Commercial Street southbound left-turn phase operates at LOS E. All movement v/c ratios at the intersection under 2027 conditions with the traffic signal in place will be below 1.00, indicating that sufficient capacity is present upon completion of the project.

Under 2040 Future Year Conditions with the traffic signal control in place, Walnut Street approaches are expected to operate at elevated levels of service (LOS E); however still operate better or comparable to existing conditions without the traffic signal. This 2040 condition at the intersection of Commercial Street / Walnut Street is not expected to fully materialize as 20-year volume projections may be well over conservative for the location. Similar to 2027 Conditions, the Commercial Street southbound left-turn phase will operate at an elevated level of service;

however, the phase has very limited traffic volume and the protected phase is seen as optimal due to safety.

Commercial Street / I-95 SB Off-ramp

In 2027 Future Year Proposed Geometry Conditions, the overall intersection LOS and delay are expected to be acceptable (LOS A) for the weekday morning and weekday evening peak period. Additionally, in 2040 with the proposed traffic signal at the intersection, the overall intersection LOS and delay are expected to be LOS B or better for the weekday morning and weekday evening peak period. It is expected for the 2040 LOS and delay to increase due to the yearly increase in traffic volume. These measurements collected at this intersection are more than acceptable for it to operate safely and efficiently.

VIII. PROPOSED IMPROVEMENTS

COMPLIANCE WITH POLICIES AND ENGINEERING STANDARDS

The current 25% Design for the proposed Commercial Street / Walnut Street Intersection Improvements Project are based on policies and standards set forth by MassDOT and AASHTO's *A Policy on Geometric Design of Highways and Streets, 6th Edition*.[8] Commercial Street is a non-National Highway System (NHS) roadway and therefore the design criteria are in accordance with the PDDG to the maximum extent feasible for the project type. Where possible, the project also complies to bicycle accommodation and pedestrian accommodation criteria established by MassDOT as part of its "Healthy Transportation Policy Directive P-13-0001" and the subsequent Engineering Directive E-20-001 to the maximum extent practicable. A Design Justification Workbook (DJW) has been submitted for bicycle and pedestrian accommodations along Commercial Street, design exceptions are not expected to be required for the ramp modifications.

INTERSECTION IMPROVEMENT OVERVIEW

Commercial Street / Walnut Street

To accommodate all vehicular traffic traveling through the intersection, and to provide additional reserve capacity within the area, the Town has committed to the following improvements at the intersection of Commercial Street / Walnut Street:

- Installation of a fully actuated traffic signal with video detection, emergency vehicle preemption, and signal coordination to the I-95 SB Off-ramp;
- Widening of the northerly leg of Commercial Street to provide a southbound left-turn lane, a through lane, and a shared through/right-turn lane;
- Extension of the Commercial Street northbound left-turn lane;
- Removal of Walnut Street eastbound right-turn channelized lane;
- Installation of guardrail along Commercial Street, north of the intersection, within the project limits;
- Striping of new pavement markings and installation of new *MUTCD* compliant regulatory and warning signs throughout the project limits;

[8] *A Policy on Geometric Design of Highways and Streets, 6th Edition (The AASHTO Green Book)*; American Association of State Highway and Transportation Officials; Washington D.C.; 2011.

- Construct pedestrian accommodations at the intersection with marked crosswalks, ADA / AAB accessible curb-ramps on all intersection corners, and push button actuated pedestrian traffic signals; and
- Resurfacing of pavement within the project limits.

Commercial Street / I-95 SB Off-Ramp

To accommodate all vehicular traffic traveling through the intersection, and to provide additional reserve capacity within the area, the Town has committed to the following improvements at the intersection of Commercial Street / I-95 SB Off-ramp:

- Installation of a fully actuated traffic signal with video detection, emergency vehicle preemption, and signal coordination to the Walnut Street intersection;
- Striping of new pavement markings and installation of new *MUTCD* compliant regulatory and warning signs throughout the project limits; and
- Resurfacing of pavement within the project limits.

CONSISTENCY WITH ROUTE 140 STUDY

The overall design of the intersection improvements is consistent with the findings and recommendations presented in the *Route 140 Study* as prepared by SRPEDD in April 2018. This includes:

- Traffic signal warrants conducted as part of this FDR confirms, like the Study, that a traffic signal is warranted at this intersection;
- The introduction of a traffic signal at this intersection would improve safety by protecting vehicles making turns from Walnut Street onto Commercial Street; and
- The traffic signal as designed will include advanced signal warning signs (W3-3) as a result of the curved geometry of Commercial Street.

ALTERNATIVES ANALYSIS

TEC has coordinated with MassDOT District 5 directly for the overview of the alternative analysis in November 2020. The overview focused on several alternatives for both the traffic control at the intersection of Commercial Street / Walnut Street, the alignment of the Commercial Street / I-95 SB Off-Ramp intersection, and the traffic control for the Commercial Street / I-95 SB Off-Ramp intersection. Through these conversations, MassDOT District 5 was in conceptual agreement for the installation of a traffic signal at both the intersections of Commercial Street / Walnut Street and Commercial Street / I-95 SB Off-Ramp, as well as maintaining the currently alignment of the I-95 SB Off-Ramp. The following summarizes the alternatives analysis as noted to MassDOT.

Roundabout Alternative

As prescribed by the *MassDOT – Highway Division Traffic and Safety Engineering 25% Design Submission Guidelines*[9], a roundabout was considered to address the operational and safety control of traffic at the intersection of Commercial Street / Walnut Street. Information provided in the *National Cooperative Highway Research Program (NCHRP) Report 672 (Roundabouts: An Informational Guide)*[10] was utilized in this evaluation. *Report 672* provides planning-level comparisons of different types of roundabouts (mini to multilane) and the corresponding best-fit roadway characteristics.

TEC performed a planning analysis in accordance with the September 2020 MassDOT publication, *Guidelines for the Planning and Design of Roundabouts* ("Guidelines"). Per Section 2.2 of the *Guidelines*, which outlines conditions that influence roundabout implementation,

Summary of Non-Operational Analysis

TEC evaluated the intersection of Commercial Street / Walnut Street for determination of whether a roundabout in this location would be generally advantageous. Table 1 outlines the results of this evaluation.

Table 11 – Roundabout Site Specific Conditions

Advantageous	Not Advantageous
Intersection has a documented safety concern – averages 5 crashes per year	Intersection has a heavy flow of through traffic on the major street opposed by light traffic on the minor street
The intersection is a two-way stop-controlled intersection with high side-street delays. This intersection meets traffic signal warrants with future programmed development	Intersection has acute angles between approaches due to the alignment of Walnut Street
Intersection is at a gateway or entry point into downtown Foxborough – Commercial Street is two lanes north of the intersection and four lanes south of the intersection	Intersection is adjacent to environmentally sensitive areas on three of the four corners of the intersection – including recorded conservation land owned by the Commonwealth on the northwest corner
Intersection is a location where traffic calming may be desired	
Intersection is a location where the speed environment of the road changes – the posted speed limit changes from 55 mph south of the intersection to 40 mph north of the intersection	
Intersection is a location where there is a need to provide a transition between land use environments – local commercial and residential north of the intersection and regional commercial to the south of the intersection	

Based upon the above, a roundabout would be generally advantageous in this location. TEC therefore prepared a preliminary layout to determine whether the angle of the Walnut Street approaches can be accommodated geometrically, the anticipated impact to conservation lands and potential for additional right-of-way acquisition.

[9] *Traffic and Safety Engineering 25% Design Submission Guidelines*; Massachusetts Department of Transportation – Highway Division; Boston, Massachusetts; Revised February 15, 2011, page 6 of 9

[10] *NCHRP Report 672 - Roundabouts: An Informational Guide, 2nd Edition*; National Cooperative Highway Research Program – Transportation Research Board; Washington, D.C.; 2010

Summary of Roundabout Cost / Benefit Analysis

TEC performed a comprehensive alternatives analysis as per the MassDOT Safety publication, Alternative *Analysis Guide* (July 2020), using the MassDOT Safety Alternatives Analysis Guide Spreadsheet Tool for Method 1 – Expected Crash Frequency via Empirical Bayes.

The following information was presented in the memorandum *Commercial Street / Walnut Street, Foxborough, MA - Request for Comment Resolution Meeting* prepared by TEC and submitted to MassDOT on November 17, 2020. The Spreadsheet Tool results indicate that the traffic signal will reduce the number of crashes per year by 2.12 crashes and the roundabout will reduce the number of crashes per year by 2.72 crashes. The roundabout is shown to have a safety cost benefit higher than the signalized intersection by approximately $50,000 for the first year. Over the 20-year life cycle of the project, the cost/benefit ratio is 1.1 for the traffic signal and 1.2 for the roundabout. Since both alternatives have cost/benefit ratios higher than one, both are economically justified.

Summary of Roundabout Capacity and Queue Analysis

Capacity vehicle queue analyses were conducted to project the roundabout operation in the 2027 Future Year Conditions. The analyses were prepared using the GDOT Roundabout Analysis Tool as approved within the MassDOT's *Guide on Traffic Analysis Tools* (October 5, 2012). Both a single- and two-lane hybrid roundabout were analyzed, where two lanes are provided on Commercial Street and one lane is provided for Walnut Street. The following details the results of the analyses, which are outlined in Table 12.

Table 12 – Intersection Capacity and Queue Analysis Summary – Roundabout Alternative

Intersection / Lane Group	2027 Future Year							
	Single Lane Roundabout				Multi-Lane Roundabout			
	V/C[a]	Delay[b]	LOS[c]	Queue[d]	V/C	Delay	LOS	Queue
Commercial Street / Walnut Street								
Weekday Morning Peak Period								
Walnut Street EB	0.51	17.6	C	74	0.42	12.5	B	53
Walnut Street WB	0.15	19.6	C	<25	0.10	12.9	B	<25
Commercial Street NB	1.31	158.9	F	1488	0.64	11.7	B	172
Commercial Street SB	0.87	23.4	C	315	0.40	6.7	A	54
Overall Intersection	**1.31**	**98.0**	**F**	**-**	**0.64**	**10.1**	**B**	**-**
Weekday Evening Peak Period								
Walnut Street EB	0.39	16.5	C	45	0.31	11.7	B	32
Walnut Street WB	0.10	10.5	B	<25	0.08	8.1	A	<25
Commercial Street NB	0.91	25.6	D	373	0.45	7.1	A	64
Commercial Street SB	1.14	90.2	F	832	0.55	9.7	A	92
Overall Intersection	**1.14**	**55.5**	**F**	**-**	**0.55**	**8.6**	**A**	**-**

[a] Volume-to-capacity ratio;
[b] Delay expressed in seconds per vehicle (average);
[c] Level of service;
[d] 95th Percentile Queue (feet)

Under 2027 Future Year Condition, with the installation of a single-lane roundabout, the Commercial Street northbound approach during the weekday morning peak hour and Commercial Street southbound approach during the weekday evening peak hour operates with LOS F and

with significant queue lengths. Of notable concern is the projected 95th percentile queue lengths during these time periods for the respective approaches which extend more than ¼ mile. With the addition of a multi-lane roundabout, the operations significantly improve with all approaches operating at LOS or better. With the implementation of a multi-lane roundabout, all approaches operate with level of service B or better during the peak hours with reduced queues from the signalized intersection operation. Roundabout analysis worksheets are provided in Appendix J.

Environmental Consideration

Article 97 restricted conservation land and delineated wetlands exist on the northwest and southeast quadrants of the intersection of Commercial Street / Walnut Street. The project design with a traffic signal improves the storm drainage system throughout the project area and does not impact area wetlands. The conceptual roundabout design shows permanent easements necessary on the northwest and southeast quadrants of the intersection. Limits of grading have not been assessed at this time but could impact wetlands buffer areas or require replication of wetlands area.

Summary of Roundabout Alternative

After considering the positive and negative impacts for the inclusion of roundabouts as an alternative for intersection improvements, TEC found that a roundabout is not the appropriate option for the Commercial Street / Walnut Street intersection location. This decision was based upon engineering judgment as defined within the following limitations:

- It is expected that an addition of a roundabout would disrupt the heavy flow of vehicles, approximately 20,000 vehicles per day (vpd), traveling along Commercial Street.
- Commercial Street carries a much higher volume of traffic compared to Walnut Street and when installing a roundabout, it is preferred that all approaches have a generally similar volume of traffic so that all approaches have an equal and safe gap to enter the roundabout, as well as a balanced level of conflict; and
- The significant skew of the Walnut Street approaches versus the Commercial Street approaches would require significant Walnut Street realignment and impacts to environmental resource areas including Article 97 conservation land and wetlands.

I-495 SB Off-Ramp Alternatives

Route 140 Lane Reduction Alternative

Consideration was given to the cross-sectional adjustment along Commercial Street northbound, south of the I-95 SB Off-Ramp. The alternative would reduce the northbound bore to one travel lane at a merge point approximately 550-feet south of the current location of the I-95 SB Off-Ramp merge. The I-95 SB Off-Ramp would itself add the second travel lane back to the northbound bore entering the intersection with Walnut Street. The consideration for this change was primarily to allow for I-95 SB Off-Ramp weave movements to Walnut Street west to cross only one-lane of Commercial Street through movements. The alternative was found to be detrimental to traffic operations. The decision was based upon engineering judgment as defined within the following limitations:

- The significant impact to Commercial Street northbound traffic at the merge point upstream.
- The alternative did not mitigate the safety issue from the lack of distance between the I-95 SB Off-Ramp and Walnut Street; whether the Walnut Street intersection was signalized or unsignalized.

I-95 SB Off-Ramp – Off-Ramp Realignment Alternative

Consideration was given to whether the I-95 SB Off-Ramp could be reconfigured further from the intersection without adding signal control. TEC prepared a preliminary layout plan reconfiguring the ramp intersection to provide a yield condition closer to a 90-degree angle to replace the existing merge condition. This relocates the ramp approximately 350-feet further from the intersection of Commercial Street / Walnut Street. This would increase the two-lane weave distance between the off-ramp and Commercial Street. TEC modeled the ramp intersection with Commercial Street as a stop-controlled intersection as the most conservative operating condition during the peak hours. The alternative was found to be detrimental to traffic operations and safety. The decision was based upon engineering judgment as defined within the following limitations:

- The analysis noted that the ramp operated with elevated levels of service (LOS F) during the morning and evening peak hours with queues of eleven vehicles or less during the 2040 Future Year condition; and
- The alternative would result in a significantly shorter sight distance for vehicles exiting the ramp looking south due to the vegetation south of the I-95 SB On-Ramp and the I-95 overpass bridge abutments.

PROPOSED IMPROVEMENTS

Proposed Traffic Control Modifications

The intersection**s** of Commercial Street / Walnut Street and the intersection of Commercial Street / I-95 SB Off-ramp are both currently unsignalized and provides free movement for the Commercial Street approaches and stop-control on the Walnut Street approaches. A traffic control signal is proposed as part of the design as a countermeasure to both traffic operations and safety conditions at both intersections within the project limits. The traffic signal will be installed with several safety and operational enhancements; including FYA for permissive left turns on the Commercial Street southbound approach, clearance intervals calculated based on guidance provided in the *MassDOT Guidance on Calculating Clearance Intervals at Traffic Signals Interoffice Memorandum*[11], vehicle and bicycle detection, dilemma zone detection based on the high-speed nature of Route 140, Accessible Pedestrian Signal (APS) equipment and pedestrian signage, and emergency vehicle pre-emption. Clearance interval calculations are provided in Appendix K.

No Turn on Red prohibitions will be signed along the Commercial Street northbound and southbound approaches due to the extended right-turn distance to the adjacent crosswalk. All traffic signal infrastructure as part of the newly constructed traffic signal has been designed to provide the minimum 1.5-foot lateral offset from face of curb as described in the MassDOT *Project*

[11] *MassDOT Guidance on Calculating Clearance Intervals at Traffic Signals – Interoffice Memorandum*; Massachusetts Department of Transportation – Highway Division; Boston, Massachusetts; Issued January 8, 2013

Development and Design Guide (PDDG)[12]. The traffic signal shall be wired through a new conduit and pull box network.

Modified Geometry

Improvements to the geometry along Commercial Street and Walnut Street are necessary to minimize conflicts between through traffic, turning traffic, and pedestrian / bicycle traffic. These multi-modal improvements comply with standards and guidelines from the AASHTO[13] and the *PDDG*. The following geometric improvements have been included as part of the 25% Design:

- Complete minor widening along Commercial Street, both north and south of Walnut Street, within the project limits to provide the following specific improvements:
    - Extend the Commercial Street northbound left-turn lane to 375-feet for additional queue storage in conjunction with new residential development;
    - Construct a 275-foot left-turn lane along the Commercial Street southbound approach at Walnut Street;
    - Widen the Commercial Street southbound to accommodate an additional 12-feet wide through lane;
    - Reconstruct the raised concrete medians both north and south of Walnut Street to accommodate the shift in lanes and to redefine the 6-inch curb reveal for the sloped granite edging;
- Install guardrail along Commercial Street, north of the intersection, within the project limits;
- Stripe new thermoplastic crosswalk markings, STOP-lines, white lane lines, yellow centerlines, and white edge lines within the project limits;
- Install new MUTCD compliant regulatory and warning signs throughout the project limits; including installation of advanced traffic signal warning signage (W3-3) along the Commercial Street and Walnut Street approaches; and
- Resurface all pavement within the project limits.

PEDESTRIAN ACCOMODATIONS

The proposed sidewalk improvements will create a more pedestrian-friendly area. The improvements will be designed to encourage walking. The following lists the scope of sidewalk work accommodations.

- Construct new accessible curb ramps to provide ADA / AAB-compliant ramps on all four intersection corners to support marked crosswalks across each intersection leg. Stripe new crosswalks between each reconstructed accessible ramp pair;
- Construct new sidewalk between each corner's accessible ramps; and

[12] *MassHighway Project Development and Design Guide*; MassHighway (presently Massachusetts Department of Transportation – Highway Division); Boston, Massachusetts; 2006

[13] *A Policy on Geometric Design of Highways and Streets, 6th Edition (The AASHTO Green Book)*; American Association of State Highway and Transportation Officials; Washington D.C.; 2011

- Provide APS traffic signal equipment at each accessible ramp at the intersection.

There are currently no other sidewalks within 1,500-feet of the intersection along each of the four approaches. Therefore, any extension of sidewalks to the project limits will force a terminus of pedestrian accommodations at an unsafe crossing location. Sidewalks will be designed to promote further sidewalk construction as part of separate projects.

ENVIRONMENTAL IMPACTS

General Environmental Impacts

It is anticipated that the roadway improvements will not permanently impact wetlands in the vicinity of the improvements. Temporary impacts to vegetated wetlands total 340 square feet (SF) and include locally jurisdictional isolated vegetated wetlands. This temporary impact is strictly modifications to grading and will not change the characteristic of the vegetation and or resources. As design plans progress, TEC will work with the Town of Foxborough Conservation Commission on any steps necessary for the temporary grading work. Any alterations required by the Conservation Commission will be incorporated into the design plans.

The proposed intersection improvements are not anticipated to result in any other measurable environmental impacts, as outlined below:

- **Planned Growth** – Significant impacts to planned growth or land use for the surrounding area are not anticipated as the reconstruction of the Commercial Street / Walnut Street intersection and the adjacent ramp work is separate from other private development work in the area. The signalization of the I-95 SB Off-Ramp does not include the construction of highway in a new location, changing any portion of the highway to uncontrolled access, or adding any new interchanges;
- **Persons Relocation** – The project does not require the relocation of any individuals as the scope of work is generally contained within the right-of-way along the existing SHLO and/or land owned by the Town of Foxborough;
- **Resources** – Significant impacts to any natural, cultural, recreational, historic, or other resources are not expected as part of the Project;
- **Air Quality** – As previously reported in this Chapter, air quality is expected to be improved as the delay on Walnut Street will reduce intersection delays and queues at the study intersection;
- **Water Quality** –The proposed project provides an opportunity to improve the stormwater quality through new deep sump catch basins;
- **Travel Patterns** – Significant impacts to travel patterns are not anticipated because the project does not include the construction of highway in a new location, changing any portion of the highway to uncontrolled access, or adding any new interchanges;
- **Controversy on Environmental Grounds** – No controversy has been evident in any public comments received;
- **Historic Preservation** – The project does not involve the use of any properties protected for historical preservation;

- **State / Federal Law** – The project is in compliance with all state and federal laws, requirements, and administrative determinations relating to environmental aspects of the project;
- **Massachusetts Coastal Zone Management Plan** – The project is not within a Coastal Zone Management community;
- **Sale, Transfer, or Lease of State-Owned Land** – The project does not involve the sale, transfer, or lease of any state-owned land;
- **State Historic Preservation Officer** – The project is not located on or near any history or cultural resources;
- **Environmental Justice** – The project does not adversely impact minority or low-income populations;
- **Water Conservation** – The project does not involve the use of any properties protected by the Land and Water Conservation Act;
- **Army Corps of Engineers Section 404 Permit** – The project does not involve the discharge of dredged or fill materials into U.S. waters and therefore does not require a Section 404 permit;
- **Coast Guard Permit** – The project does not require a Coast Guard Permit;
- **Threatened / Endangered Species and Critical Habitat** – The project does not affect any federally-listed threatened or endangered species or critical habitat according to the Massachusetts Division of Fisheries and Wildlife;
- **Floodplain** – The project does not encroach upon any applicable floodplain boundaries;
- **Rivers** – The project does not involve any designated rivers in the Natural System of Wild and Scenic Rivers;
- **Farmland** – The project does not impact any prime or unique farmland according to the United States Department of Agriculture's Natural Resources Conservation Service;
- **Superfund** – The project does not involve any sites included on the Environmental Protection Agency's (EPA) National Priorities List; and
- **Construction-Related Traffic Impacts** – Traffic management plans for temporary traffic control and any potential detour routes will be developed in coordination with MassDOT prior to construction related activities.

PROJECT COORDINATION

TEC has met with representatives of MassDOT and the Town of Foxborough on several occasions throughout the planning and design of the Project. Coordination between TEC, MassDOT, and the Town of Foxborough is ongoing through the 25% Design.

Interchange Modification Report (IMR) Requirement Determination

This PFD/FDR demonstrates a positive effect on safety and traffic operations and the investigation of multiple design alternatives within the I-95 interchange 13 with Commercial Street. As all feasible measures have been identified and addressed, preparing an IMR would not identify any additional improvements to I-95 Interchange 13 and would not add value to FHWA's review of the proposed improvements. For these reasons, preparation of a separate IMR document in support of the proposed interchange modifications is not anticipated. Note that the design does not change the orientation or positioning of the ramp.

Funding Plan and Schedule

Funding for this project is not currently identified; however, the Town of Foxborough will be responsible to secure funding prior to construction. Although funding is not specifically allocated or identified, the Town has established a design schedule to commence construction in the Spring of 2021. The construction is anticipated to be substantially completed in one construction season.

IX. CONCLUSIONS

TEC has examined the potential traffic impacts associated with the Commercial Street / Walnut Street Intersection Improvements Project, located in Foxborough, Massachusetts on the study area roadways and intersections. The following is a summary of the results and conclusions of this effort:

- Installation of a fully actuated traffic signal at the intersection of Commercial Street and Walnut Street and at the intersection of Commercial Street northbound and the Exit 7A I-95 SB Off-ramp;
- Widening of the northerly leg of Commercial Street to provide a southbound left-turn lane, a through lane, and a shared through/right-turn lane;
- Extension of the Commercial Street northbound left-turn lane;
- Removal of Walnut Street eastbound right-turn channelized lane;
- Installation of guardrail along Commercial Street, north of the intersection, within the project limits;
- Striping of new pavement markings and installation of new *MUTCD* compliant regulatory and warning signs throughout the project limits;
- Construct pedestrian accommodations at the intersection with marked crosswalks, ADA / AAB accessible curb-ramps on all intersection corners, and push button actuated pedestrian traffic signals; and
- Resurfacing of pavement within the project limits.

The overall vehicular and pedestrian improvements within the project limits will improve traffic safety by providing defined separation between each travel mode. In addition, new traffic signals at the intersections of Commercial Street / Walnut Street and Commercial Street / I-95 SB Off-ramp are anticipated to provide an enhanced level of intersection control for two intersections that currently experience operational and safety issues for vehicles specifically along the Walnut Street approaches. The design incorporates improvements identified in the *Route 140 Study* completed by SRPEDD in April 2018.

X. CONSISTENCY WITH FHWA INTERSTATE POLICY

Commercial Street / Walnut Street Intersection Improvements Project Preferred Alternative discussed within this PFD is consistent with the May 22, 2017 FHWA Policy on Access to the Interstate System (FHWA Policy) in that it enhances the Interstate System connection to Commercial Street (Route 140), the Town of Foxborough, Walnut Street Residential Housing Development located at the southwest corner of the Commercial Street / Walnut Street intersection. The Preferred Alternative is centered around traffic signal improvements at the Commercial Street / Walnut Street intersection and its connection to a new traffic signal along Commercial Street's northbound bore at the I-95 SB Off-Ramp as evaluated in Chapter VIII. This PFD offers the following in accordance with the two requirements outlined as necessary for approval within the FHWA Policy in order to justify and document that the Infrastructure Improvement Project provides a benefit to the continued functionality of the I-95 Interchange 13:

REQUIREMENT 1 – SAFETY & TRAFFIC OPERATIONAL ANALYSIS

Safety

The project area consists of several existing safety considerations and concerns that effect the Commercial Street corridor, Walnut Street, and the I-95 SB Off-ramp. The major concerns are summarized below:

- *Walnut Street Egress Movements* – Drivers experience significant difficulty exiting from Walnut Street due to the high speeds observed both north and south of the intersection and the length of crossing to turn left and/or go through to the opposing Walnut Street approach. This is especially noticeable along Walnut Street westbound where the curvature of Commercial Street to the south and the presence of the higher speed movements exiting the I-95 SB Off-ramp exacerbate the hesitance of egressing drivers. The intersection sight distance (ISD) looking south from Walnut Street westbound is below desired recommendations;
- *Intersection Skew Geometry* – The Walnut Street approaches are skewed to Commercial Street creating an X-style intersection. In addition, the through movement for the opposing Walnut Street approaches is excessive at 170-feet due to the alignment. This distance contributes to left-turning vehicles to potentially conflict in the center of the intersection. The alignment also forces drivers to view far over their shoulder to see oncoming traffic along Commercial Street;
- *Weave Movement* – There is limited distance between the merge point of the I-95 SB Off-ramp and the left-turn to Walnut Street along Commercial Street

northbound. This short distance requires vehicles to weave in a short distance along a high-speed corridor and a horizontal curve.

The proposed Commercial Street / Walnut Street Intersection Improvements Project Preferred Alternative will not have substantial impact to the I-95 SB Off-ramp as operations are expected to be acceptable. The change in traffic control at this location to a traffic signal will enhance the ability for vehicles exiting the ramp to access Walnut Street west of the intersection without anxiety of conflicting with vehicles travelling along Commercial Street northbound. Provision of the Preferred Alternative will allow traffic to safely and efficiently access Walnut Street and Commercial Street without an impact on the I-495 mainline highway system.

Traffic Operations

A detailed traffic operational analysis was performed for the I-95 SB Off-ramp intersection with Commercial Street, the upstream ramp diverge point, and the local roadway study area in Section VIII. In the 2027 Future Year condition, without the Preferred Alternative in place, the Commercial Street / Walnut Street intersection would provide degraded levels of service and an operational challenge for vehicles exiting the I-95 SB Off-Ramp to access Walnut Street to the west due to the short distance between the intersections. The analysis also provided projections of queues along the I-95 SB Off-ramp and indicated that queues under the 2040 Future Year condition would not exceed 250-feet, or 10 vehicles. This allows for ample space so that queues do not approach the I-95 SB mainline.

No impact to the I-95 Interchange 13 Merge and Diverge on the I-95 mainline is anticipated. Design concepts associated with the Preferred Alternative immediately follow this section. Capacity and queue analysis worksheets can be found in Appendix I.

REQUIREMENT 2 – ACCESS CONNECTIONS & DESIGN

Design Standards

The current engineering designs for the proposed Commercial Street / Walnut Street Intersection Improvements Project are based on policies and standards set forth by MassDOT and AASHTO's *A Policy on Geometric Design of Highways and Streets, 6th Edition* (per 23 CFR 625.4(a)(2)). The Commercial Street / I-95 SB Off-ramp intersections have been designed in accordance with the *MassHighway PPDG* to the maximum extent feasible for non-NHS roadways (per 23 CFR 625.2(a)). All signage and traffic control devices within the Preferred Alternative conform with the *MUTCD* and the *Massachusetts Amendments to the MUTCD* (per 23 CFR 655.603(d)). The Bicycle Accommodation Criteria and the Pedestrian Accommodations Criteria established by MassDOT as part of its "Healthy Transportation Policy Directive P-13-0001" and the subsequent Engineering Directive E-20-001 have been accommodated to the maximum extent practicable. A DJW has been submitted for bicycle and pedestrian accommodations along Commercial Street where these criteria could not be met. Design exceptions are not expected to be required for change in ramp control as no physical modifications to the ramp are proposed.

Access and Traffic Movements

The Preferred Alternative maintains all traffic movements entering and exiting I-95 at Interchange 13. No changes to vehicular access to the Interstate System are considered within the Preferred Alternative. No modification to the I-95 mainline is proposed. The Preferred Alternative overview

plans, following this section, show that driver expectation for all movements would be met. The operations of the immediately adjacent interchanges on I-95 are not anticipated to be impacted as a result of the project.

LEVEL OF SERVICE ANALYSIS

Intersection	
Int Delay, s/veh	15.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	3	107	6	3	10	79	1005	35	17	799	62
Future Vol, veh/h	37	3	107	6	3	10	79	1005	35	17	799	62
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	4	129	7	4	12	95	1211	42	20	963	75

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1839	2484	1001	2465	2500	627	1038	0	0	1253	0	0
Stage 1	1041	1041	-	1422	1422	-	-	-	-	-	-	-
Stage 2	798	1443	-	1043	1078	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	52	29	294	18	29	427	668	-	-	553	-	-
Stage 1	277	306	-	144	201	-	-	-	-	-	-	-
Stage 2	346	196	-	276	294	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 37	23	294	~ 7	23	427	668	-	-	553	-	-
Mov Cap-2 Maneuver	~ 37	23	-	~ 7	23	-	-	-	-	-	-	-
Stage 1	238	279	-	124	172	-	-	-	-	-	-	-
Stage 2	282	168	-	140	268	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	144.2	$ 564.4	0.8	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	668	-	-	35	294	19	553	-	-
HCM Lane V/C Ratio	0.142	-	-	1.377	0.438	1.205	0.037	-	-
HCM Control Delay (s)	11.3	-	-	$ 459	26.5	$ 564.4	11.8	0	-
HCM Lane LOS	B	-	-	F	D	F	B	A	-
HCM 95th %tile Q(veh)	0.5	-	-	5.2	2.1	3.2	0.1	-	-

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

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	1	107	2	5	93	46	6	0	0	2	3
Future Vol, veh/h	1	107	2	5	93	46	6	0	0	2	3
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	145	3	7	126	62	8	0	0	3	4
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.2	8.2	7.4
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	1%	3%	100%
Vol Thru, %	0%	97%	65%	0%
Vol Right, %	82%	2%	32%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	110	144	39
LT Vol	2	1	5	39
Through Vol	0	107	93	0
RT Vol	9	2	46	0
Lane Flow Rate	15	149	195	53
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.173	0.215	0.072
Departure Headway (Hd)	4.283	4.191	3.98	4.888
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	840	841	885	737
Service Time	2.286	2.288	2.075	2.889
HCM Lane V/C Ratio	0.018	0.177	0.22	0.072
HCM Control Delay	7.4	8.2	8.2	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.6	0.8	0.2

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	2	86	24	5	15	142	744	8	9	851	54
Future Vol, veh/h	15	2	86	24	5	15	142	744	8	9	851	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	2	90	25	5	16	148	775	8	9	886	56

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1618	2011	914	2008	2035	392	942	0	0	783	0	0
Stage 1	932	932	-	1075	1075	-	-	-	-	-	-	-
Stage 2	686	1079	-	933	960	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	76	59	330	39	57	608	726	-	-	833	-	-
Stage 1	319	344	-	235	295	-	-	-	-	-	-	-
Stage 2	405	294	-	318	334	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	56	46	330	~ 23	44	608	726	-	-	833	-	-
Mov Cap-2 Maneuver	56	46	-	~ 23	44	-	-	-	-	-	-	-
Stage 1	254	336	-	187	235	-	-	-	-	-	-	-
Stage 2	307	234	-	225	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.9	$ 395	1.8	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	726	-	-	55	330	37	833	-	-
HCM Lane V/C Ratio	0.204	-	-	0.322	0.271	1.239	0.011	-	-
HCM Control Delay (s)	11.2	-	-	98.9	19.9	$ 395	9.4	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	0.8	-	-	1.1	1.1	4.7	0	-	-

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

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	2	76	1	12	156	20	6	0	0	8	1
Future Vol, veh/h	2	76	1	12	156	20	6	0	0	8	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	83	1	13	170	22	7	0	0	9	1
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.7	8.3	7.6
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	73%	3%	6%	100%
Vol Thru, %	0%	96%	83%	0%
Vol Right, %	27%	1%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	79	188	25
LT Vol	8	2	12	25
Through Vol	0	76	156	0
RT Vol	3	1	20	0
Lane Flow Rate	12	86	204	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.099	0.228	0.036
Departure Headway (Hd)	4.576	4.154	4.016	4.776
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	787	854	889	754
Service Time	2.577	2.226	2.067	2.776
HCM Lane V/C Ratio	0.015	0.101	0.229	0.036
HCM Control Delay	7.6	7.7	8.3	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.9	0.1

Intersection	
Int Delay, s/veh	21.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	4	122	6	3	10	92	1005	35	17	799	67
Future Vol, veh/h	42	4	122	6	3	10	92	1005	35	17	799	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	5	147	7	4	12	111	1211	42	20	963	81

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1874	2519	1004	2500	2538	627	1044	0	0	1253	0	0
Stage 1	1044	1044	-	1454	1454	-	-	-	-	-	-	-
Stage 2	830	1475	-	1046	1084	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	~ 49	28	293	17	27	427	664	-	-	553	-	-
Stage 1	276	305	-	137	194	-	-	-	-	-	-	-
Stage 2	331	190	-	275	292	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 34	21	293	~ 6	21	427	664	-	-	553	-	-
Mov Cap-2 Maneuver	~ 34	21	-	~ 6	21	-	-	-	-	-	-	-
Stage 1	230	278	-	114	162	-	-	-	-	-	-	-
Stage 2	262	158	-	123	266	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	191.1	$ 719.7	0.9	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	664	-	-	32	293	16	553	-	-
HCM Lane V/C Ratio	0.167	-	-	1.732	0.502	1.431	0.037	-	-
HCM Control Delay (s)	11.5	-	-	$ 621	29	$ 719.7	11.8	0	-
HCM Lane LOS	B	-	-	F	D	F	B	A	-
HCM 95th %tile Q(veh)	0.6	-	-	6.3	2.6	3.4	0.1	-	-

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

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	3	18	144	4	21
Future Vol, veh/h	146	3	18	144	4	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	159	3	20	157	4	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	162	0	358	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1417	-	640	884
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1417	-	630	884
Mov Cap-2 Maneuver	-	-	-	-	630	-
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	830	-	-	1417	-
HCM Lane V/C Ratio	0.033	-	-	0.014	-
HCM Control Delay (s)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	1	109	2	5	96	47	6	0	0	2	3
Future Vol, veh/h	1	109	2	5	96	47	6	0	0	2	3
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	147	3	7	130	64	8	0	0	3	4
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.2	8.2	7.4
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	1%	3%	100%
Vol Thru, %	0%	97%	65%	0%
Vol Right, %	82%	2%	32%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	112	148	40
LT Vol	2	1	5	40
Through Vol	0	109	96	0
RT Vol	9	2	47	0
Lane Flow Rate	15	151	200	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.181	0.221	0.074
Departure Headway (Hd)	4.302	4.298	4.087	4.905
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	835	840	884	734
Service Time	2.314	2.298	2.087	2.915
HCM Lane V/C Ratio	0.018	0.18	0.226	0.074
HCM Control Delay	7.4	8.2	8.2	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.7	0.8	0.2

Intersection	
Int Delay, s/veh	21.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	2	103	24	6	15	161	744	8	9	851	61
Future Vol, veh/h	21	2	103	24	6	15	161	744	8	9	851	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
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	23	2	112	26	7	16	175	809	9	10	925	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1736	2146	958	2143	2175	409	991	0	0	818	0	0
Stage 1	978	978	-	1164	1164	-	-	-	-	-	-	-
Stage 2	758	1168	-	979	1011	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	62	48	311	31	46	592	696	-	-	808	-	-
Stage 1	300	328	-	207	268	-	-	-	-	-	-	-
Stage 2	366	267	-	300	316	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	41	35	311	~ 15	33	592	696	-	-	808	-	-
Mov Cap-2 Maneuver	41	35	-	~ 15	33	-	-	-	-	-	-	-
Stage 1	225	319	-	155	201	-	-	-	-	-	-	-
Stage 2	258	200	-	185	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	53.5	$ 780.3	2.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	696	-	-	40	311	25	808	-	-
HCM Lane V/C Ratio	0.251	-	-	0.625	0.36	1.957	0.012	-	-
HCM Control Delay (s)	11.9	-	-	190.7	22.9	$ 780.3	9.5	0	-
HCM Lane LOS	B	-	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	1	-	-	2.3	1.6	6	0	-	-

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	5	27	201	4	23
Future Vol, veh/h	97	5	27	201	4	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	5	29	218	4	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	110	0	384	108
Stage 1	-	-	-	-	108	-
Stage 2	-	-	-	-	276	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1480	-	619	946
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1480	-	605	946
Mov Cap-2 Maneuver	-	-	-	-	605	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	754	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	873	-	-	1480	-
HCM Lane V/C Ratio	0.034	-	-	0.02	-
HCM Control Delay (s)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	2	79	1	12	159	21	6	0	0	8	1
Future Vol, veh/h	2	79	1	12	159	21	6	0	0	8	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	86	1	13	173	23	7	0	0	9	1
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.7	8.3	7.7
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	73%	2%	6%	100%
Vol Thru, %	0%	96%	83%	0%
Vol Right, %	27%	1%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	82	192	27
LT Vol	8	2	12	27
Through Vol	0	79	159	0
RT Vol	3	1	21	0
Lane Flow Rate	12	89	209	29
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.103	0.233	0.039
Departure Headway (Hd)	4.596	4.162	4.02	4.792
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	851	887	752
Service Time	2.597	2.237	2.074	2.792
HCM Lane V/C Ratio	0.015	0.105	0.236	0.039
HCM Control Delay	7.7	7.7	8.3	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.3	0.9	0.1

Intersection	
Int Delay, s/veh	53.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	4	122	7	4	11	90	1139	40	19	905	71
Future Vol, veh/h	41	4	122	7	4	11	90	1139	40	19	905	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	5	147	8	5	13	108	1372	48	23	1090	86

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2084	2815	1133	2794	2834	710	1176	0	0	1420	0	0
Stage 1	1179	1179	-	1612	1612	-	-	-	-	-	-	-
Stage 2	905	1636	-	1182	1222	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	~ 34	18	246	10	17	377	592	-	-	477	-	-
Stage 1	231	263	-	109	162	-	-	-	-	-	-	-
Stage 2	299	158	-	231	251	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 18	13	246	~ 2	12	377	592	-	-	477	-	-
Mov Cap-2 Maneuver	~ 18	13	-	~ 2	12	-	-	-	-	-	-	-
Stage 1	189	225	-	89	133	-	-	-	-	-	-	-
Stage 2	227	129	-	78	215	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 419	$ 2709.7	0.9	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	592	-	-	17	246	6	477	-	-
HCM Lane V/C Ratio	0.183	-	-	3.189	0.598	4.418	0.048	-	-
HCM Control Delay (s)	12.4	-	-	$ 1448.6	39.2	$ 2709.7	12.9	0	-
HCM Lane LOS	B	-	-	F	E	F	B	A	-
HCM 95th %tile Q(veh)	0.7	-	-	7.4	3.5	4.7	0.2	-	-

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

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	1	122	2	6	106	52	7	0	0	2	4
Future Vol, veh/h	1	122	2	6	106	52	7	0	0	2	4
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	165	3	8	143	70	9	0	0	3	5
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.5	8.5	7.5
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	1%	4%	100%
Vol Thru, %	0%	98%	65%	0%
Vol Right, %	85%	2%	32%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	125	164	45
LT Vol	2	1	6	45
Through Vol	0	122	106	0
RT Vol	11	2	52	0
Lane Flow Rate	18	169	222	61
Geometry Grp	1	1	1	1
Degree of Util (X)	0.021	0.204	0.254	0.084
Departure Headway (Hd)	4.381	4.34	4.122	4.998
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	817	829	873	718
Service Time	2.406	2.354	2.135	3.02
HCM Lane V/C Ratio	0.022	0.204	0.254	0.085
HCM Control Delay	7.5	8.5	8.5	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.8	1	0.3

Intersection	
Int Delay, s/veh	43.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	2	97	27	6	17	161	843	9	10	964	61
Future Vol, veh/h	17	2	97	27	6	17	161	843	9	10	964	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
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	18	2	105	29	7	18	175	916	10	11	1048	66

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1915	2379	1081	2375	2407	463	1114	0	0	926	0	0
Stage 1	1103	1103	-	1271	1271	-	-	-	-	-	-	-
Stage 2	812	1276	-	1104	1136	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	46	34	264	~ 21	33	547	625	-	-	736	-	-
Stage 1	256	286	-	178	238	-	-	-	-	-	-	-
Stage 2	340	237	-	255	276	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	27	23	264	~ 9	23	547	625	-	-	736	-	-
Mov Cap-2 Maneuver	27	23	-	~ 9	23	-	-	-	-	-	-	-
Stage 1	184	275	-	128	171	-	-	-	-	-	-	-
Stage 2	228	171	-	146	265	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	73	$ 1695.3	2.1	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	625	-	-	27	264	15	736	-	-
HCM Lane V/C Ratio	0.28	-	-	0.765	0.399	3.623	0.015	-	-
HCM Control Delay (s)	13	-	-	$ 306.1	27.4	$ 1695.3	10	0	-
HCM Lane LOS	B	-	-	F	D	F	A	A	-
HCM 95th %tile Q(veh)	1.1	-	-	2.4	1.8	7.6	0	-	-

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

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	2	86	1	13	176	23	7	0	0	9	1
Future Vol, veh/h	2	86	1	13	176	23	7	0	0	9	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	93	1	14	191	25	8	0	0	10	1
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.8	8.5	7.8
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	75%	2%	6%	100%
Vol Thru, %	0%	97%	83%	0%
Vol Right, %	25%	1%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	89	212	29
LT Vol	9	2	13	29
Through Vol	0	86	176	0
RT Vol	3	1	23	0
Lane Flow Rate	13	97	230	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.112	0.258	0.043
Departure Headway (Hd)	4.681	4.184	4.032	4.857
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	769	845	883	741
Service Time	2.683	2.271	2.094	2.858
HCM Lane V/C Ratio	0.017	0.115	0.26	0.043
HCM Control Delay	7.8	7.8	8.5	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1	0.1

Intersection	
Int Delay, s/veh	93.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	5	138	7	4	11	103	1139	40	19	905	76
Future Vol, veh/h	46	5	138	7	4	11	103	1139	40	19	905	76
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	55	6	166	8	5	13	124	1372	48	23	1090	92

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2119	2850	1136	2829	2872	710	1182	0	0	1420	0	0
Stage 1	1182	1182	-	1644	1644	-	-	-	-	-	-	-
Stage 2	937	1668	-	1185	1228	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	~ 32	17	245	10	16	377	589	-	-	477	-	-
Stage 1	231	262	-	104	157	-	-	-	-	-	-	-
Stage 2	285	152	-	230	250	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 16	11	245	~ 1	11	377	589	-	-	477	-	-
Mov Cap-2 Maneuver	~ 16	11	-	~ 1	11	-	-	-	-	-	-	-
Stage 1	182	224	-	82	124	-	-	-	-	-	-	-
Stage 2	209	120	-	61	214	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 547.6	$ 5774.9	1	0.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	589	-	-	15	245	3	477	-	-
HCM Lane V/C Ratio	0.211	-	-	4.096	0.679	8.835	0.048	-	-
HCM Control Delay (s)	12.7	-	-	$ 1904.9	45	$ 5774.9	12.9	0	-
HCM Lane LOS	B	-	-	F	E	F	B	A	-
HCM 95th %tile Q(veh)	0.8	-	-	8.5	4.4	4.9	0.2	-	-

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

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	3	18	165	4	21
Future Vol, veh/h	167	3	18	165	4	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	3	20	179	4	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	185	0	403	184
Stage 1	-	-	-	-	184	-
Stage 2	-	-	-	-	219	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1390	-	603	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1390	-	593	858
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	801	-	-	1390	-
HCM Lane V/C Ratio	0.034	-	-	0.014	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	1	124	2	6	109	53	7	0	0	2	4
Future Vol, veh/h	1	124	2	6	109	53	7	0	0	2	4
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	168	3	8	147	72	9	0	0	3	5
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.5	8.6	7.5
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	1%	4%	100%
Vol Thru, %	0%	98%	65%	0%
Vol Right, %	85%	2%	32%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	127	168	46
LT Vol	2	1	6	46
Through Vol	0	124	109	0
RT Vol	11	2	53	0
Lane Flow Rate	18	172	227	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.021	0.207	0.26	0.087
Departure Headway (Hd)	4.401	4.35	4.13	5.016
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	814	827	872	715
Service Time	2.426	2.366	2.144	3.037
HCM Lane V/C Ratio	0.022	0.208	0.26	0.087
HCM Control Delay	7.5	8.5	8.6	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.8	1	0.3

Intersection	
Int Delay, s/veh	59.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	2	111	27	7	17	180	843	9	10	964	68
Future Vol, veh/h	22	2	111	27	7	17	180	843	9	10	964	68
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	-	-	75	-	-	-	115	-	-	-	-	-
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	24	2	121	29	8	18	196	916	10	11	1048	74

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1961	2425	1085	2421	2457	463	1122	0	0	926	0	0
Stage 1	1107	1107	-	1313	1313	-	-	-	-	-	-	-
Stage 2	854	1318	-	1108	1144	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.33	6.53	6.93	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	42	32	262	~ 19	30	547	620	-	-	736	-	-
Stage 1	254	285	-	168	227	-	-	-	-	-	-	-
Stage 2	321	226	-	254	274	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 21	21	262	~ 7	20	547	620	-	-	736	-	-
Mov Cap-2 Maneuver	~ 21	21	-	~ 7	20	-	-	-	-	-	-	-
Stage 1	174	273	-	115	155	-	-	-	-	-	-	-
Stage 2	202	155	-	130	263	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	121.6	$ 2253.8	2.3	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	620	-	-	21	262	12	736	-	-
HCM Lane V/C Ratio	0.316	-	-	1.242	0.461	4.62	0.015	-	-
HCM Control Delay (s)	13.5	-	-	$ 545.3	36	$ 2253.8	10	0	-
HCM Lane LOS	B	-	-	F	D	F	A	A	-
HCM 95th %tile Q(veh)	1.3	-	-	3.5	2.3	8	0	-	-

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	5	27	228	4	23
Future Vol, veh/h	110	5	27	228	4	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	5	29	248	4	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	125	0	429	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1462	-	583	928
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1462	-	570	928
Mov Cap-2 Maneuver	-	-	-	-	570	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	730	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.4
HCM LOS			A

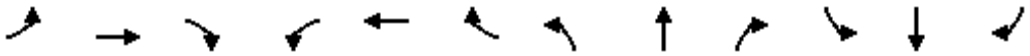
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	849	-	-	1462	-
HCM Lane V/C Ratio	0.035	-	-	0.02	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	2	89	1	13	179	24	7	0	0	9	1
Future Vol, veh/h	2	89	1	13	179	24	7	0	0	9	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	97	1	14	195	26	8	0	0	10	1
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.8	8.6	7.8
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	75%	2%	6%	100%
Vol Thru, %	0%	97%	83%	0%
Vol Right, %	25%	1%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	92	216	31
LT Vol	9	2	13	31
Through Vol	0	89	179	0
RT Vol	3	1	24	0
Lane Flow Rate	13	100	235	34
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.116	0.263	0.046
Departure Headway (Hd)	4.701	4.192	4.037	4.874
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	766	842	880	739
Service Time	2.703	2.281	2.102	2.875
HCM Lane V/C Ratio	0.017	0.119	0.267	0.046
HCM Control Delay	7.8	7.8	8.6	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1.1	0.1

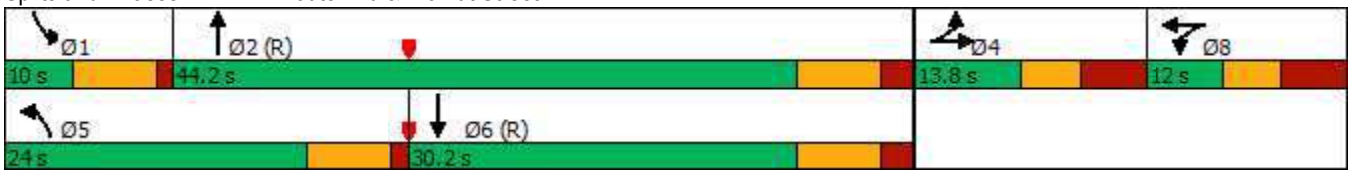


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	5	138	7	4	11	103	1139	40	19	905	76
Future Volume (vph)	46	5	138	7	4	11	103	1139	40	19	905	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	16	16	11	11	11	12	12	12	11	16	11
Storage Length (ft)	0		75	0		0	115		0	0		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.901			0.932			0.995			0.988	
Flt Protected		0.988			0.985		0.950			0.950		
Satd. Flow (prot)	0	1879	0	0	1653	0	1770	3522	0	1711	3963	0
Flt Permitted		0.988			0.985		0.950			0.950		
Satd. Flow (perm)	0	1879	0	0	1653	0	1770	3522	0	1711	3963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		133			13			6			11	
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		791			418			1118			896	
Travel Time (s)		18.0			9.5			13.9			11.1	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Adj. Flow (vph)	55	6	166	8	5	13	124	1372	48	23	1090	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	0	0	26	0	124	1420	0	23	1182	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		4.0	4.0		6.0	12.0		4.0	12.0	
Minimum Split (s)	13.5	13.5		12.0	12.0		24.0	19.0		10.0	19.0	
Total Split (s)	13.8	13.8		12.0	12.0		24.0	44.2		10.0	30.2	
Total Split (%)	17.3%	17.3%		15.0%	15.0%		30.0%	55.3%		12.5%	37.8%	
Yellow Time (s)	3.5	3.5		3.5	3.5		5.0	5.0		5.0	5.0	
All-Red Time (s)	4.0	4.0		4.0	4.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.5			7.5		6.0	7.0		6.0	7.0	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		6.3			4.5		10.9	50.4		5.1	40.0	
Actuated g/C Ratio		0.08			0.06		0.14	0.63		0.06	0.50	
v/c Ratio		0.84			0.25		0.51	0.64		0.21	0.59	
Control Delay		44.1			30.5		39.0	13.9		40.9	19.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		44.1			30.5		39.0	13.9		40.9	19.3	
LOS		D			C		D	B		D	B	
Approach Delay		44.1			30.5			16.0			19.7	
Approach LOS		D			C			B			B	
Queue Length 50th (ft)		47			6		59	127		11	193	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		#135			27		95	360		32	333	
Internal Link Dist (ft)		711			338			1038			816	
Turn Bay Length (ft)							115					
Base Capacity (vph)		270			105		398	2220		109	1988	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.84			0.25		0.31	0.64		0.21	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 19.7		Intersection LOS: B	
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MA Route 140 & Walnut Street



Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	167	3	18	165	4	21
Future Vol, veh/h	167	3	18	165	4	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	182	3	20	179	4	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	185	0	403	184
Stage 1	-	-	-	-	184	-
Stage 2	-	-	-	-	219	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1390	-	603	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1390	-	593	858
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.7
HCM LOS			A

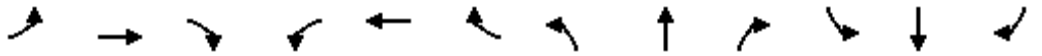
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	801	-	-	1390	-
HCM Lane V/C Ratio	0.034	-	-	0.014	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	1	124	2	6	109	53	7	0	0	2	4
Future Vol, veh/h	1	124	2	6	109	53	7	0	0	2	4
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	168	3	8	147	72	9	0	0	3	5
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.5	8.6	7.5
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	1%	4%	100%
Vol Thru, %	0%	98%	65%	0%
Vol Right, %	85%	2%	32%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	127	168	46
LT Vol	2	1	6	46
Through Vol	0	124	109	0
RT Vol	11	2	53	0
Lane Flow Rate	18	172	227	62
Geometry Grp	1	1	1	1
Degree of Util (X)	0.021	0.207	0.26	0.087
Departure Headway (Hd)	4.401	4.35	4.13	5.016
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	814	827	872	715
Service Time	2.426	2.366	2.144	3.037
HCM Lane V/C Ratio	0.022	0.208	0.26	0.087
HCM Control Delay	7.5	8.5	8.6	8.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.8	1	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	111	27	7	17	180	843	9	10	964	68
Future Volume (vph)	22	2	111	27	7	17	180	843	9	10	964	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	16	16	11	11	11	12	12	12	11	16	11
Storage Length (ft)	0		75	0		0	115		0	0		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.889			0.956			0.998			0.990	
Flt Protected		0.992			0.974		0.950			0.950		
Satd. Flow (prot)	0	1862	0	0	1677	0	1770	3532	0	1711	3971	0
Flt Permitted		0.992			0.974		0.950			0.950		
Satd. Flow (perm)	0	1862	0	0	1677	0	1770	3532	0	1711	3971	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		121			18			2			12	
Link Speed (mph)		30			55			30			55	
Link Distance (ft)		791			418			1118			896	
Travel Time (s)		18.0			5.2			25.4			11.1	
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
Adj. Flow (vph)	24	2	121	29	8	18	196	916	10	11	1048	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	55	0	196	926	0	11	1122	0
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases												
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		4.0	4.0		6.0	12.0		4.0	12.0	
Minimum Split (s)	13.5	13.5		12.0	12.0		12.5	19.0		10.0	19.0	
Total Split (s)	13.6	13.6		12.0	12.0		13.4	29.4		10.0	26.0	
Total Split (%)	20.9%	20.9%		18.5%	18.5%		20.6%	45.2%		15.4%	40.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	4.0	4.0		4.0	4.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		7.5			7.5		4.5	5.5		4.5	5.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		6.1			4.7		9.4	40.5		5.5	27.5	
Actuated g/C Ratio		0.09			0.07		0.14	0.62		0.08	0.42	
v/c Ratio		0.52			0.40		0.77	0.42		0.08	0.66	
Control Delay		16.0			30.7		49.6	10.8		28.8	20.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		16.0			30.7		49.6	10.8		28.8	20.7	
LOS		B			C		D	B		C	C	
Approach Delay		16.0			30.7			17.6			20.8	
Approach LOS		B			C			B			C	
Queue Length 50th (ft)		10			14		77	115		4	217	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		58			46		#177	223		18	#333	
Internal Link Dist (ft)		711			338			1038			816	
Turn Bay Length (ft)							115					
Base Capacity (vph)		284			138		257	2203		144	1688	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.52			0.40		0.76	0.42		0.08	0.66	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 19.3		Intersection LOS: B	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 2: MA Route 140 & Walnut Street

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	5	27	228	4	23
Future Vol, veh/h	110	5	27	228	4	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	5	29	248	4	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	125	0	429	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1462	-	583	928
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1462	-	570	928
Mov Cap-2 Maneuver	-	-	-	-	570	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	730	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	849	-	-	1462	-
HCM Lane V/C Ratio	0.035	-	-	0.02	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWU	NWL	NWR
Lane Configurations											
Traffic Vol, veh/h	2	89	1	13	179	24	7	0	0	9	1
Future Vol, veh/h	2	89	1	13	179	24	7	0	0	9	1
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	97	1	14	195	26	8	0	0	10	1
Number of Lanes	0	1	0	0	1	0	1	0	0	1	0

Approach	EB	WB	NW
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB	NW	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NW	SB	SB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.8	8.6	7.8
HCM LOS	A	A	A

Lane	NWLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	75%	2%	6%	100%
Vol Thru, %	0%	97%	83%	0%
Vol Right, %	25%	1%	11%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	92	216	31
LT Vol	9	2	13	31
Through Vol	0	89	179	0
RT Vol	3	1	24	0
Lane Flow Rate	13	100	235	34
Geometry Grp	1	1	1	1
Degree of Util (X)	0.017	0.116	0.263	0.046
Departure Headway (Hd)	4.701	4.192	4.037	4.874
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	766	842	880	739
Service Time	2.703	2.281	2.102	2.875
HCM Lane V/C Ratio	0.017	0.119	0.267	0.046
HCM Control Delay	7.8	7.8	8.6	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.4	1.1	0.1